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EXPERIMENTAL INVESTIGATION OF SHOCK-CELL NOISE REDUCTION FOR SINGLE-STREAM NOZZLES IN SIMULATED FLIGHT

Contract NAS3-22514

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Comprehensive Data Report

VOLUME II

Laser Velocimeter Data

by

K. Yamamoto
J.F. Brausch
B.A. Janardan
D.J. Hoerst
A.O. Price
P.R. Knott



GENERAL  ELECTRIC

For

National Aeronautics and Space Administration
Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135

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16. Abstract This Comprehensive Data Report, composing three volumes, includes the basic test description and test results which are analyzed and documented in the companion Final Report. Volume I contains a description of the model nozzle configurations, acoustic test conditions, and detailed test results from the hot static and simulated flight acoustic tests at the General Electric Anechoic Chamber. Volume II presents the diagnostic laser velocimeter test results. Volume III contains the diagnostic flow visualization test results obtained by shadowgraph along with a description of test facilities and data acquisition and reduction techniques. Design drawings of scale model nozzles are also included in Volume III.					
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VOLUME II

LASER VELOCIMETER DATA

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5.0 LASER VELOCIMETER TESTS

Mean velocity (axial component) and turbulent velocity (axial component) measurements for thirty-one (31) selected flow conditions of six models were performed employing the laser Doppler velocimeter. Aerodynamic conditions which define the test points are given in Subsection 5.1. Tabulations which explain the scope of mean velocity traverses and turbulence histogram measurements are also presented in Subsection 5.1. Subsection 5.2 contains tabulated data that describes the actual LV position, the type of traverse, and measured mean and turbulent velocities along with copies of the LV mean velocity traces.

5.1 TEST MATRIX AND AERODYNAMIC CONDITIONS OF TEST POINTS

The aerodynamic test conditions of the thirty-one (31) test points are presented in Tables 5-1 through 5-6. The LV test points presented in these tables correspond to the acoustic test points presented in Sections 3.2 through 3.7 of Volume I.

Each model includes the C-D design point (or corresponding test point), both at static and flight-simulated conditions. Additionally, some over-expanded or under-expanded cases were also tested. Most of the LV tests reported herein were conducted at an elevated temperature of $T_T \approx 960^\circ \text{ K}$ (1730° R). A limited number of lower temperature tests [$T_T \approx 470^\circ \text{ K}$ (850° R)] were also performed, mainly to identify the temperature dependency of the LV resolution capability.

Tables 5-7 through 5-37 summarize the scope of the LV tests. The scope of each of the thirty-one (31) test points consists of at least one of the following:

1. Normal Axial Traverses -- Traverses starting at: ..
 - o The exit plane and proceed along the centerline of the nozzle or along parallel lines to the centerline (circular nozzles).
 - o The end of the center plug and along the centerline of the nozzle or along parallel lines to the centerline (plug nozzles).
2. Normal Radial Traverses -- Traverses vertical to the centerline of the nozzle in E-W direction (i.e., along the plane of nozzle axis and microphones).

3. Slant Axial Traverses -- Traverses start at the exit plane and proceed along the lines which are parallel to the plug surface (only for plug nozzles).
4. Slant Radial (Chordwise) Traverses* -- Traverses (only in close proximity of the plug surface) vertical to the nozzle axis in N-W direction.
5. Point Histograms -- Turbulence velocities (turbulence intensities) were measured at the specified locations during the above mentioned axial, radial and chordwise traverses.

5.2 LASER VELOCIMETER TEST DATA

The measured data for LV test points given in Tables 5-38 through 5-70 are presented as follows:

- o Tabulated data in Tables 5-38 through 5-70.
The tables summarize the type of traverse with its graph number, the histogram number and its location as defined by the position of the LV control volume, the measured mean and turbulence velocities.
- o Copies of the mean velocity traces obtained on the Hewlett-Packard X-Y plotters. General remarks on the LV mean velocity traces are given in Subsection 5.2.2.

5.2.1 Tabulations of Laser Velocimeter Data

The parameters used in the tabulations of the LV data are defined below:

P_r	Pressure ratio
T_T	Total temperature, °R
V_j	Fully expanded jet exit velocity, ft/s
$V_{a/c}$	Free jet velocity, ft/s
Deq	Defined as the equivalent diameter based on total flow area, inches
h	Defined as the annulus height measured vertically to the plug surface between plug and inner wall of nozzle sleeve tip, inches

* These traverses were actually performed by using the normal traverse platform. However, locating the traverse starting points was made by utilizing the slant traverse platform (see Appendix IV).

Type of traverse	Either a radial, a chordwise or an axial traverse
Position	Position of linear voltage displacement transducer (LVDT), volts
Graph No.	Identification number of the mean velocity trace
Histogram No.	Histogram number
REF	Reference point for mean velocity traverse, volts
x, r, z	Coordinates which define circular nozzle or plug nozzle flowfield
x', r', z'	Coordinates which define plug nozzle flowfield (used relative to the slant traverse).

5.2.2 General Remarks on LV Mean Velocity Traces

Copies of the LV mean velocity traces are presented in the next subsections. The information provided on the mean velocity traces is explained on a set of sample traces provided in Figure 5-1. Additional general remarks on the mean velocity traces are given below:

- o Two kinds of mean velocity traces are available for most of the test points, i.e., pen-traverse and mini-histogram. During the present LV tests, the mean velocity data measured with the mini-histograms were obtained with the acceptable data samples set to 20. This number of samples yields an estimated 5% error in the mean velocity measurements with a statistical 95% confidence level for a given turbulence intensity of 10%.
- o "X-axis" scale shown in the traces is identical for both the pen-traverse and mini-histogram. There is, however, a slight difference of "Y-axis" scale between the two.
- o Wherever both pen-traverse and mini-histogram are provided, the "Y-axis" scale shown in each trace is the one that was defined based on the mini-histogram velocity calibration chart. Therefore, for quantitative analysis purposes, only the mini-histogram traces should be used.
- o On the other hand, wherever only the pen-traverse is given, the

"Y-axis" scale shown in the trace is the one that was defined based on the pen-traverse velocity calibration chart; and, naturally, it can be used for quantitative analysis.

- o The axial mean velocity given in the traces is normalized by the isentropically expanded jet exit velocity, corresponding to the aerodynamic conditions of the given test point.
- o The traverse distance is normalized by using either of the following parameters:
 - A) Equivalent diameter, D_{eq}
 - B) Annulus height, h
 - C) Hydraulic diameter, $D_{hyd} = \frac{4 \times (\text{Annular area})}{\text{Outer Perimeter}}$

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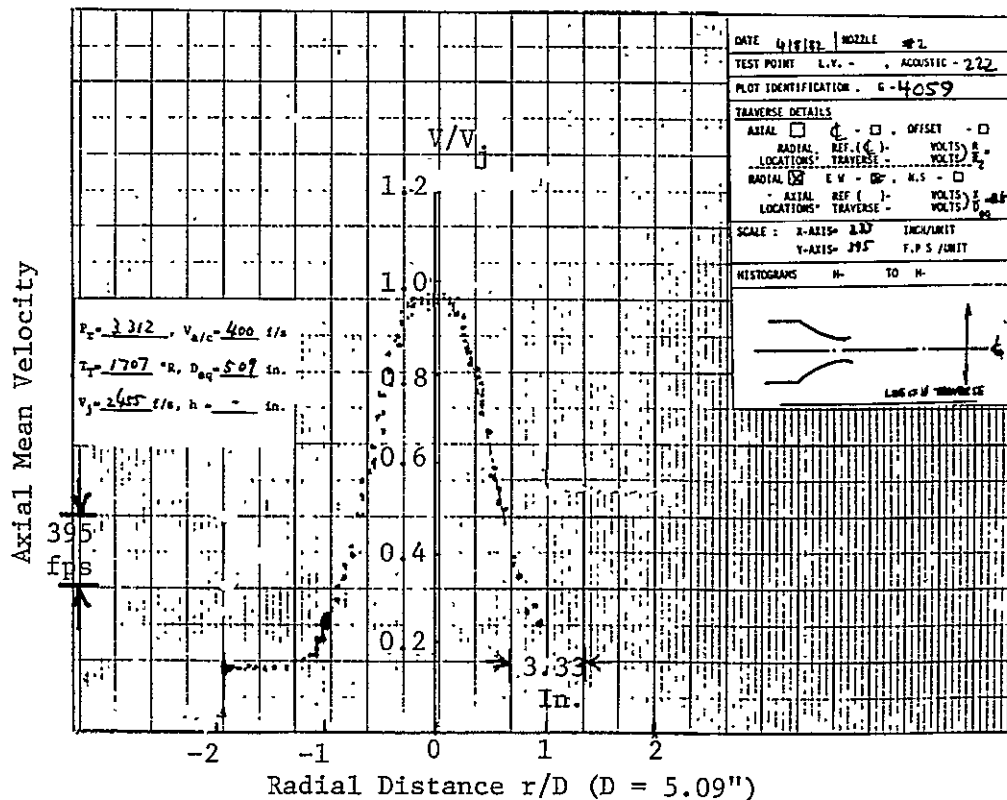
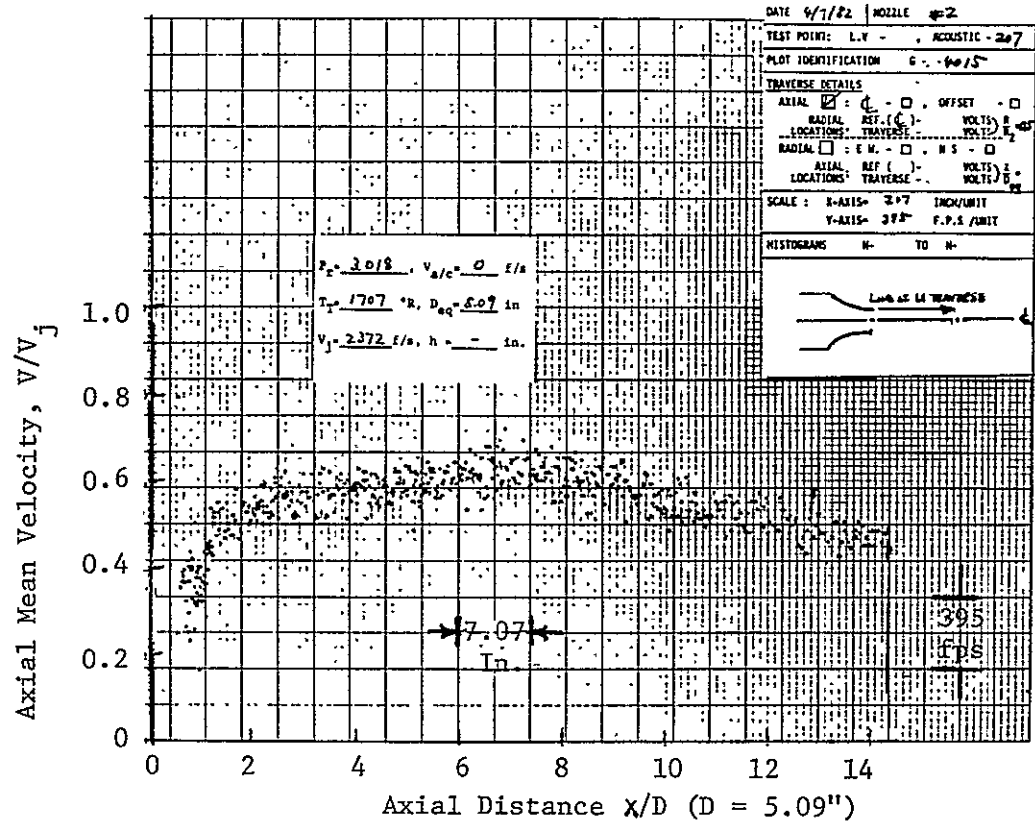


Figure 5- 1. Sample Traces Obtained During Axial and Radial Traverses.

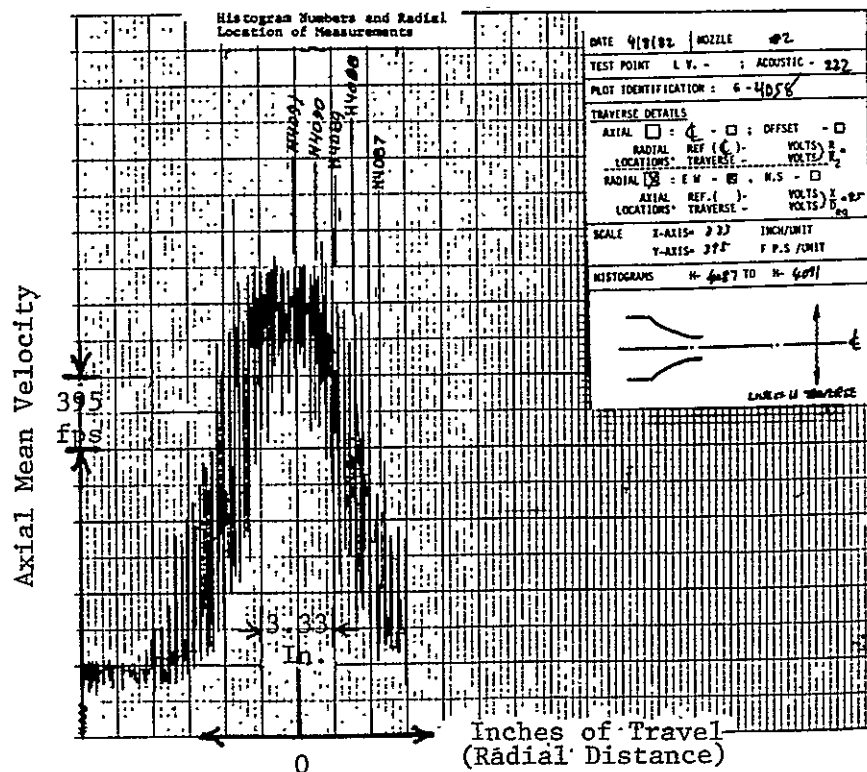
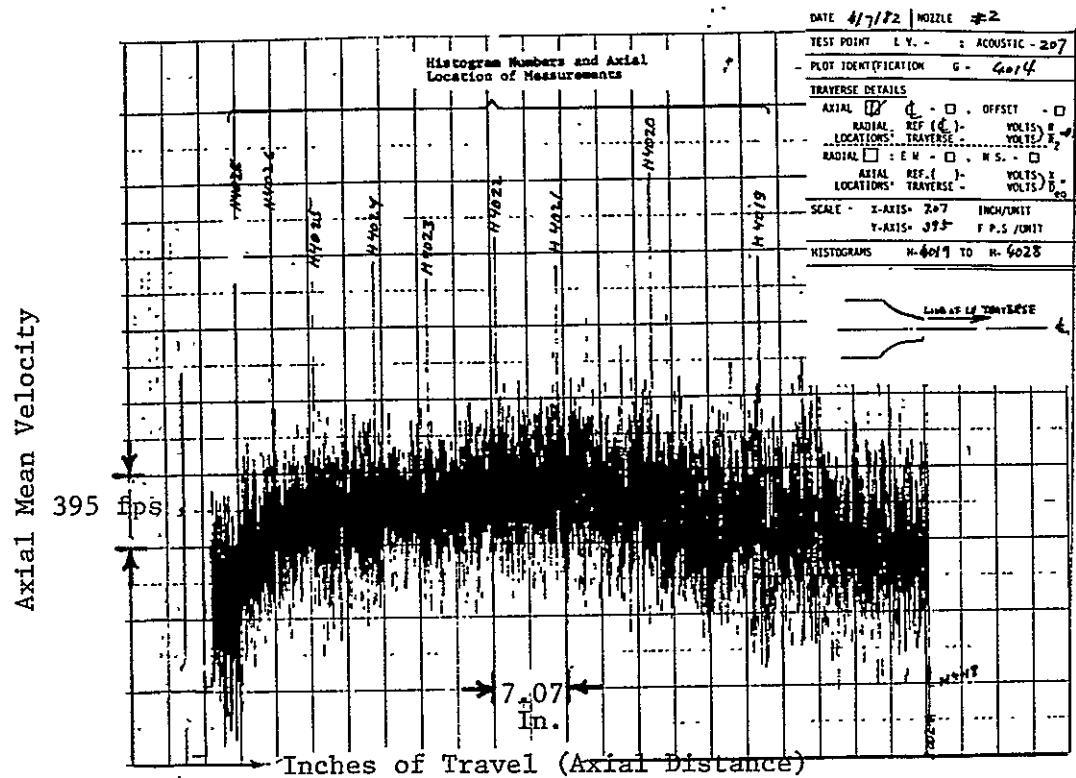


Figure 5- 1 (Cont'd). Sample Traces Obtained During Axial and Radial Traverses.

TABLE 5-1.

AERODYNAMIC CONDITIONS OF LV TEST POINTS OF MODEL 1,
CIRCULAR CONIC NOZZLE

TEST POINT	P_r	T_T	T	V_j	$V_{a/c}$	REMARKS
		$^{\circ}K$ ($^{\circ}R$)	$^{\circ}K$ ($^{\circ}R$)	m/s (ft/s)	m/s (ft/s)	
113	3.128	946 (1703)	702 (1264)	732 (2402)	0	STATIC CONDITION, CORRESPONDS TO C-D DESIGN POINT
114	3.128	963 (1734)	716 (1288)	739 (2425)	122 (400)	FLIGHT SIMULATED, CORRESPONDS TO C-D DESIGN POINT
121	3.316	949 (1708)	693 (1247)	749 (2457)	0	STATIC CONDITION, UNDEREXPANDED FLOW
122	3.323	953 (1715)	696 (1252)	751 (2464)	122 (400)	FLIGHT SIMULATED, UNDEREXPANDED FLOW

P_r = PRESSURE RATIO
 T_T = TOTAL TEMPERATURE
 T = STATIC TEMPERATURE

V_j = FULLY EXPANDED JET EXIT VELOCITY
 $V_{a/c}$ = FREE JET VELOCITY

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TABLE 5-2.

AERODYNAMIC CONDITIONS OF LV TEST POINTS OF MODEL 2
CIRCULAR CONVERGENT-DIVERGENT NOZZLE FOR DESIGN AT $M \approx 1.4$

TEST POINT	P_r	T_T	T	V_j	$V_{a/c}$	REMARKS
		$^{\circ}K$ ($^{\circ}R$)	$^{\circ}K$ ($^{\circ}R$)	m/s (ft/s)	m/s (ft/s)	
213	3.121	949 (1708)	704 (1268)	732 (2403)	0	STATIC CONDITION, C-D DESIGN POINT
214	3.121	953 (1716)	708 (1275)	734 (2409)	122 (400)	FLIGHT SIMULATED, C-D DESIGN POINT
221	3.309	943 (1697)	688 (1239)	746 (2447)	0	STATIC CONDITION, UNDEREXPANDED FLOW
222	3.312	948 (1707)	693 (1247)	748 (2455)	122 (400)	FLIGHT SIMULATED, UNDEREXPANDED FLOW
207	3.018	948 (1707)	711 (1280)	723 (2372)	0	STATIC CONDITION, OVEREXPANDED FLOW
211	3.074	949 (1709)	708 (1274)	728 (2390)	0	STATIC CONDITION, OVEREXPANDED FLOW

P_r = PRESSURE RATIO
 T_T = TOTAL TEMPERATURE
 T = STATIC TEMPERATURE

V_j = FULLY EXPANDED JET EXIT VELOCITY
 $V_{a/c}$ = FREE JET VELOCITY

TABLE 5-3.

AERODYNAMIC CONDITIONS OF LV TEST POINTS OF MODEL 3
CONTOURED CONVERGENT ANNULAR PLUG NOZZLE

TEST POINT	P_r	T_T	T	V_j	$V_{a/c}$	REMARKS
		$^{\circ}K$ ($^{\circ}R$)	$^{\circ}K$ ($^{\circ}R$)	m/s (ft/s)	m/s (ft/s)	
313	3.146	971 (1747)	721 (1297)	743 (2439)	0	STATIC CONDITION, CORRESPONDS TO C-D DESIGN POINT
314	3.136	952 (1713)	706 (1271)	735 (2411)	122 (400)	FLIGHT SIMULATED, CORRESPONDS TO C-D DESIGN POINT
321	3.320	963 (1733)	703 (1266)	755 (2476)	0	STATIC CONDITION, UNDEREXPANDED FLOW
322	3.353	955 (1719)	696 (1252)	754 (2474)	122 (400)	FLIGHT SIMULATED, UNDEREXPANDED FLOW
309	3.061	955 (1719)	713 (1284)	730 (2394)	0	STATIC CONDITION, OVEREXPANDED FLOW
1313	3.239	487 (877)	348 (627)	528 (1734)	0	STATIC CONDITION, LOW TEMP. CORRESPONDS TO C-D DESIGN PT.

 P_r = PRESSURE RATIO T_T = TOTAL TEMPERATURE T = STATIC TEMPERATURE V_j = FULLY EXPANDED JET EXIT VELOCITY $V_{a/c}$ = FREE JET VELOCITY

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 100-10000
 100-10000
 100-10000

TABLE 5-4.

AERODYNAMIC CONDITIONS OF LV TEST POINTS OF MODEL 4
CONVERGENT-DIVERGENT ANNULAR PLUG NOZZLE FOR DESIGN
AT $M_j \approx 1.4$

TEST POINT	P_r	T_T	T	V_j	$V_{a/c}$	REMARKS
		$^{\circ}K$ ($^{\circ}R$)	$^{\circ}K$ ($^{\circ}R$)	m/s (ft/s)	m/s (ft/s)	
413	3.108	957 (1723)	712 (1282)	735 (2411)	0	STATIC CONDITION, C-D DESIGN POINT
414	3.122	966 (1739)	718 (1293)	739 (2426)	122 (400)	FLIGHT SIMULATED, C-D DESIGN POINT
421	3.299	966 (1738)	707 (1272)	754 (2474)	0	STATIC CONDITION, UNDEREXPANDED FLOW
422	3.329	963 (1733)	703 (1265)	756 (2479)	122 (400)	FLIGHT SIMULATED, UNDEREXPANDED FLOW
407	3.025	962 (1732)	722 (1299)	729 (2392)	0	STATIC CONDITION, OVEREXPANDED FLOW
411	3.069	962 (1732)	718 (1293)	733 (2405)	0	STATIC CONDITION, OVEREXPANDED FLOW
419	3.214	938 (1689)	691 (1243)	736 (2416)	0	STATIC CONDITION, UNDEREXPANDED FLOW

 P_r = PRESSURE RATIO T_T = TOTAL TEMPERATURE T = STATIC TEMPERATURE V_j = FULLY EXPANDED JET EXIT VELOCITY $V_{a/c}$ = FREE JET VELOCITY
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TABLE 5-5. AERODYNAMIC CONDITIONS OF LV TEST POINTS OF MODEL 5
20 ELEMENT ANNULAR CONVERGENT SUPPRESSOR NOZZLE

TEST POINT	P_r	T_T	T	V_j	$V_{a/c}$	REMARKS
		$^{\circ}K$ ($^{\circ}R$)	$^{\circ}K$ ($^{\circ}R$)	m/s (ft/s)	m/s (ft/s)	
513	3.123	962 (1732)	715 (1287)	738 (2421)	0	STATIC CONDITION, CORRESPONDS TO C-D DESIGN POINT
514	3.128	957 (1722)	711 (1279)	736 (2415)	122 (400)	FLIGHT SIMULATED, CORRESPONDS TO C-D DESIGN POINT
1513	3.209	472 (850)	338 (609)	518 (1701)	0	STATIC CONDITION, LOW TEMP. CORRESPONDS TO C-D DESIGN PT.
1514	3.214	472 (850)	338 (609)	519 (1702)	122 (400)	FLIGHT SIMULATED, LOW TEMP. CORRESPONDS TO C-D DESIGN PT.

P_r = PRESSURE RATIO
 T_T = TOTAL TEMPERATURE
 T = STATIC TEMPERATURE

V_j = FULLY EXPANDED JET EXIT VELOCITY
 $V_{a/c}$ = FREE JET VELOCITY

TABLE 5-6.

AERODYNAMIC CONDITIONS OF LV TEST POINTS OF MODEL 6
 20 ELEMENT ANNULAR CONVERGENT-DIVERGENT SUPPRESSOR
 NOZZLE FOR DESIGN AT $M_j \approx 1.4$.

TEST POINT	P_r	T_T	T	V_j	$V_{a/c}$	REMARKS
		$^{\circ}K$ ($^{\circ}R$)	$^{\circ}K$ ($^{\circ}R$)	m/s (ft/s)	m/s (ft/s)	
613	3.128	960 (1728)	713 (1283)	738 (2420)	0	STATIC CONDITION, C-D DESIGN POINT
614	3.125	961 (1729)	713 (1284)	737 (2419)	122 (400)	FLIGHT SIMULATED, C-D DESIGN POINT
1613	3.216	473 (852)	339 (610)	519 (1704)	0	STATIC CONDITION, LOW TEMP. C-D DESIGN POINT
1614	3.215	474 (853)	339 (611)	520 (1706)	122 (400)	FLIGHT SIMULATED, LOW TEMP. C-D DESIGN POINT

P_r = PRESSURE RATIO
 T_T = TOTAL TEMPERATURE
 T = STATIC TEMPERATURE

V_j = FULLY EXPANDED JET EXIT VELOCITY
 $V_{a/c}$ = FREE JET VELOCITY

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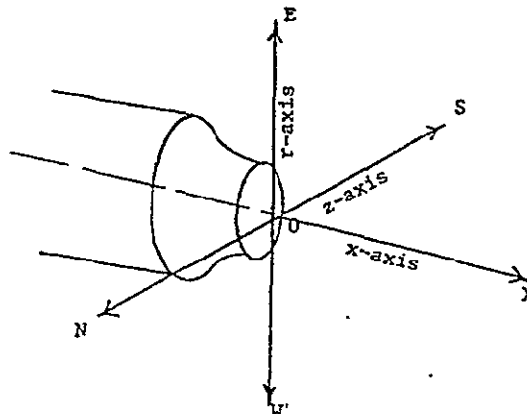
TABLE 5-7. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 1 Circular Conic Nozzle

TEST POINT 113

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	400 - 403	-	-
		$= 0.5$	404 - 405	25	926 - 950
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0.08$	406 - 407	-	-
		$= 1.07$	408 - 409	-	-
		$= 4.30$	410 - 411	-	-
		$= 8.60$	412 - 413	5	952 - 957
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TURBULENCE HISTOGRAM LOCATIONS

MODEL 1 Circular Conic Nozzle

TEST POINT 114

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	442 - 443	-	-
		$= 0.5$	444 - 445	20	1038 - 1057
		$= 0$	456 - 457	-	-
		$\gamma =$			
	RADIAL	$x/D = 0$	446 - 447	-	-
		$= 3$	448 - 449	3	1059 - 1061
		$= 3.6$	450 - 451	2	1062 - 1063
		$= 4.3$	452 - 453	-	-
		$= 8.6$	454 - 455	3	1066 - 1068
		$=$			
		$=$			
		$=$			
		$\gamma =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

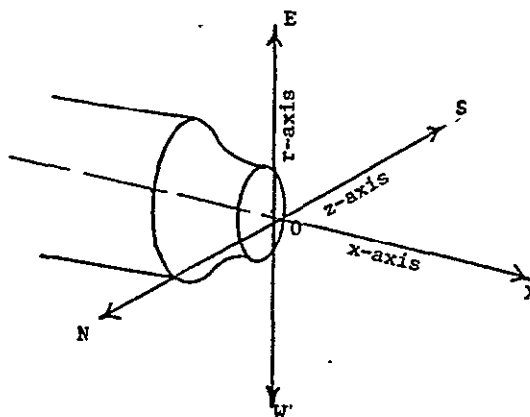


TABLE 5-9. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 1 Circular Conic Nozzle

TEST POINT 121

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	416 - 417	-	-
		$= 0.5$	424 - 425	-	-
		$= 0.5$	428 - 429	26	976 - 1001
		$\downarrow = 0.48$		8	968 - 975
	RADIAL	$x/D = 0.1$	418 - 419	-	-
		$= 1.1$	420 - 421	-	-
		$= 4.2$	422 - 423	-	-
		$= 8.5$	426 - 427	10	958 - 967
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

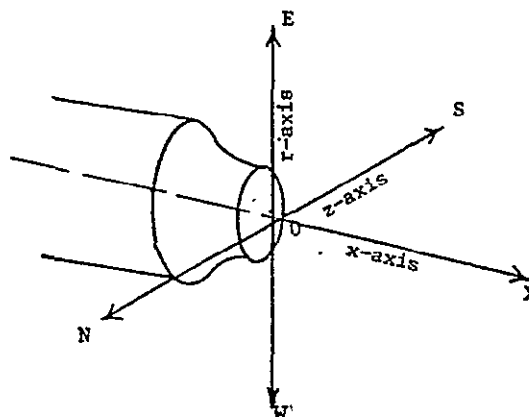


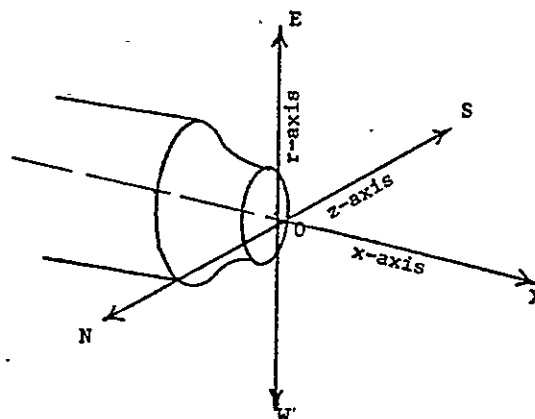
TABLE 5-10. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 1 Circular Conic Nozzle

TEST POINT 122

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	430 - 431	-	-
		$= 0.5$	432 - 433	28	1004 - 1031
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0$	434 - 435	-	-
		$= 1$	436 - 437	-	-
		$= 4.2$	438 - 439	-	-
		$= 8.5$	440 - 441	6	1032 - 1037
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	4012 - 4013	-	-
		$= 0.54$	4014 - 4015	10	4018 - 4028
		$=$			
		$\downarrow =$			
	RADIAL	$x/D =$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

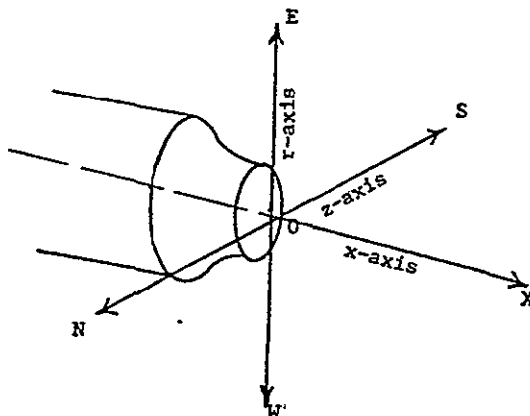
A diagram of a horn antenna. The horn is represented by a truncated cone. A vertical axis is labeled 'r-axis' with 'E' at the top and 'F' at the bottom. A horizontal axis is labeled 'x-axis' with 'S' at the right and 'N' at the left. A diagonal axis is labeled 'z-axis' with 'O' at the origin. The horn's mouth is centered at the origin 'O'.

TABLE 5-12. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 2 Circular Convergent-Divergent Nozzle for Design @ $M_j \approx 1.4$
TEST POINT 211

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	4018 - 4019	-	-
		$= 0.54$	4016 - 4017	10	4029 - 4038
		$=$			
		$\downarrow =$			
	RADIAL	$x/D =$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



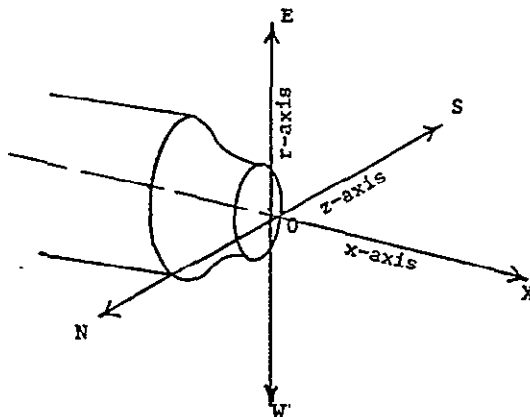
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TABLE 5-13. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 2 Circular Convergent-Divergent Nozzle for Design @ $M_1 \approx 1.4$
TEST POINT 213

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO..
NORMAL TRAVERSE	AXIAL	$r/D = 0$	4020 - 4021	-	-
		$= 0.51$	4024 - 4025	-	-
		$= 0.55$	4022 - 4023	11	4040 - 4050
		$\gamma = 0$	4034 - 4035	-	-
	RADIAL	$x/D = 1.1$	4028 - 4029	-	-
		$= 4.3$	4030 - 4031	-	-
		$= 8.6$	4032 - 4033	6	4051 - 4056
		$= 0$	4026 - 4027		
		$=$			
		$=$			
		$=$			
		$=$			
		$\gamma =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



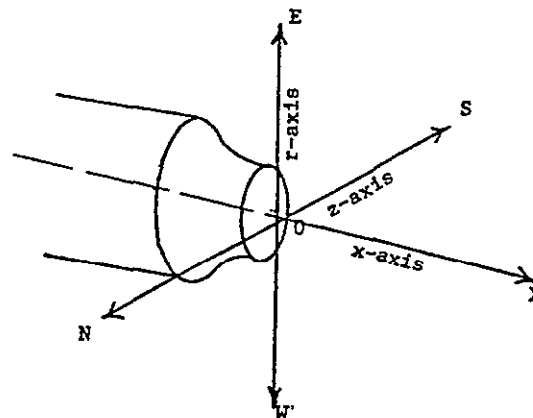
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TABLE 5-14. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 2 Circular Convergent-Divergent Nozzle for Design @ $M_j \approx 1.4$
TEST POINT 214

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	4036 - 4037	-	-
		$= 0.5$	4038 - 4039	10	4059 - 4068
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0.2$	4046 - 4047	-	-
		$= 1.2$	4044 - 4045	-	-
		$= 4.4$	4042 - 4043	-	-
		$= 8.7$	4040 - 4041	.7	4069 - 4075
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



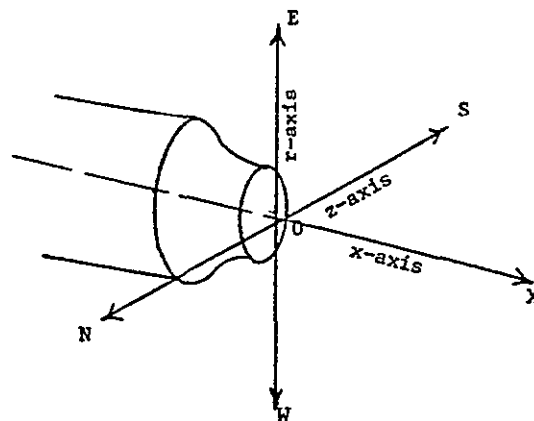
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TABLE 5-15. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MONET 2 Circular Convergent-Divergent Nozzle for Design @ $M_j \approx 1.4$
TEST POINT 221

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	4002 - 4003	-	-
		$= 0.53$	4000 - 4001	12	4000 - 4011
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0$	4010 - 4011	-	-
		$= 1.1$	4008 - 4009	-	-
		$= 4.3$	4006 - 4007	-	-
		$= 8.6$	4004 - 4005	6	4012 - 4017
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



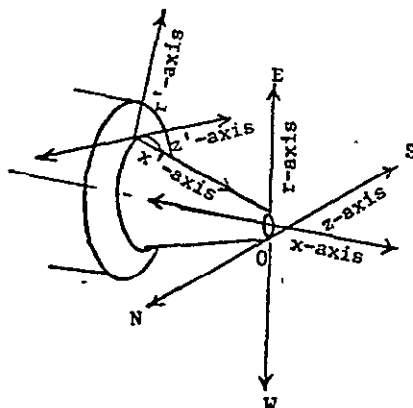
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TABLE 5-16. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 2 Circular Convergent-Divergent Nozzle for Design @ $M_j \approx 1.4$
TEST POINT 222

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	4048 - 4049	-	-
		$= 0.5$	4050 - 4051	10	4076 - 4085
		$=$			
		$\nabla =$			
	RADIAL	$x/D = 0$	4052 - 4053	-	-
		$= 1.0$	4054 - 4055	-	-
		$= 4.3$	4056 - 4057	-	-
		$= 8.5$	4058 - 4059	5	4087 - 4091
		$=$			
		$=$			
		$=$			
		$=$			
		$\nabla =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TABLE 5-17. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 3 Contoured Convergent Annular Plug Nozzle

TEST POINT 309

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	87 - 88	4	227 - 230
		$= 0.57$	89 - 90	-	-
		$=$			
		$Y =$			
	RADIAL	$x/D =$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$Y =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	91 - 94	-	-
		$=$			
		$=$			
		$=$			
		$=$			
		$Y =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

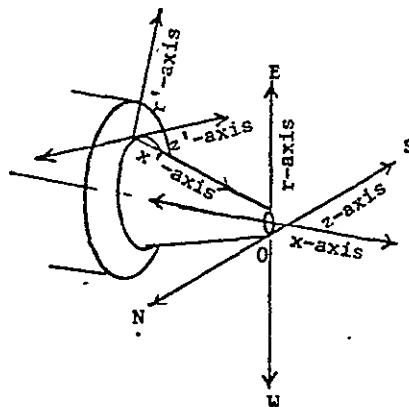
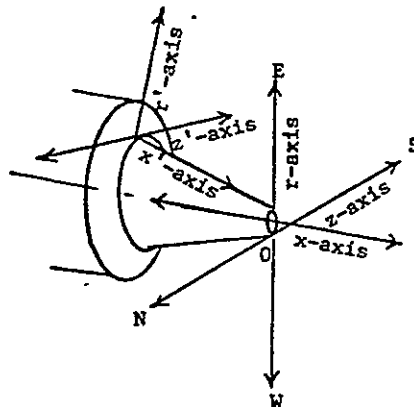


TABLE 5-18. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 3 Contoured Convergent Annular Plug Nozzle
TEST POINT 313

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	105 - 106	5	249 - 253
		$= 0.5$	107 - 108	7	255 - 261
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0$	109	4	262 - 265
		$= 2$	110	-	-
		$= 4$	111	6	266 - 271
		$= 6$	114	-	-
		$= 8$	115	5	272 - 276
		$= 10$	116	-	-
		$= 4$	112 - 113	-	-
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	95 - 96	-	-
		$= 1.0$	97 - 98	4	245 - 248
		$= 1.5$	99 - 100	-	-
		$= 2.0$	101 - 102	-	-
		$= 0.5$	103	12	231 - 242
		$\downarrow = 1.0$	104	-	-

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TABLE 5-19. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

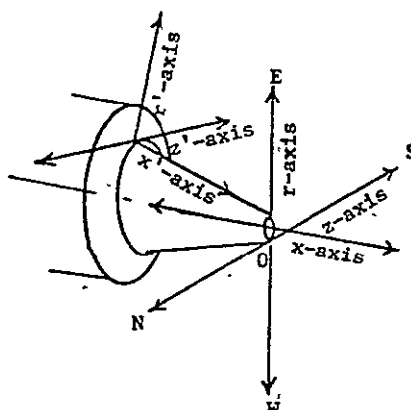
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MODEL 3 Contoured Convergent Annular Plug Nozzle

TEST POINT 314

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	146 - 147	7	322 - 328
		$= 0.5$	148 - 149	7	329 - 335
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0$	155	7	350 - 356
		$= 2$	154	1	349
		$= 4$	153	6	343 - 348
		$= 6$	152	-	-
		$= 8$	151	7	336 - 342
		$= 10$	150	-	-
		$=$			
		$=$			
		$\downarrow =$			
	SLANT TRAVERSE	$r'/h = 0.5$	156 - 157	12	357 - 368
		$= 1.0$	158 - 159	4	369 - 372
		$= 1.55$	160 - 161	-	-
		$= 0.43$	162 - 163	2	373 - 374
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TABLE 5-20. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 3 Contoured Convergent Annular Plug Nozzle
TEST POINT 321

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	125	6	292 - 297
		$= 0$	126 - 127	-	-
		$= 0.5$	128 - 129	6	298 - 303
		$\downarrow = 0.5$	130	-	-
	RADIAL	$x/D = 0$	117	5	277 - 281
		$= 2$	118	-	-
		$= 4$	119	5	282 - 286
		$= 4$	120 - 121	-	-
		$= 6$	122	-	-
		$= 8$	123	5	287 - 291
		$= 10$	124	-	-
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	132 - 133	13	304 - 316
		$= 1.0$	134 - 135	5	317 - 321
		$= 1.5$	136 - 137	-	-
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

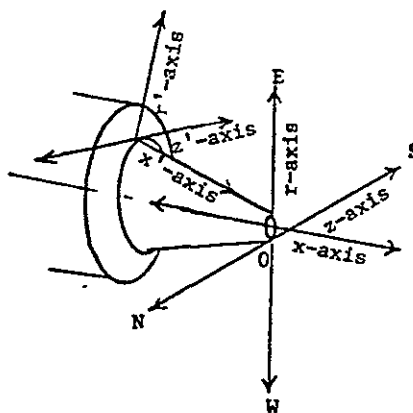


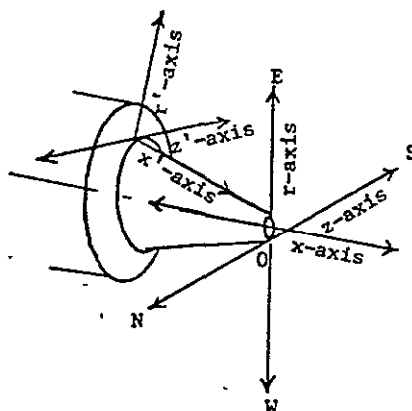
TABLE 5-21. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 3 Contoured Convergent Annular Plug Nozzle

TEST POINT 322

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	170 - 171	-	-
		$= 0$	174 - 177	5	393 - 397
		$= 0.5$	178 - 179	7	398 - 405
		$\downarrow =$			
	RADIAL	$x/D = 0$	181	6	407 - 413
		$= 2$	182	-	-
		$= 4$	183	6	415 - 421
		$= 6$	184	-	-
		$= 8$	186	7	422 - 428
		$= 10$	185	-	-
		$=$			
		$=$			
		$\downarrow =$			
		$=$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	165 - 166	13	375 - 387
		$= 1.0$	167 - 168	4	388 - 391
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TABLE 5-22. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 3 Contoured Convergent Annular Plug Nozzle

TEST POINT 1313

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	142 - 143	-	-
		$= 0.5$	144 - 145	-	-
		$=$			
		$\downarrow =$			
	RADIAL	$x/D =$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	138 - 139	-	-
		$= 1.0$	140 - 141	-	-
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

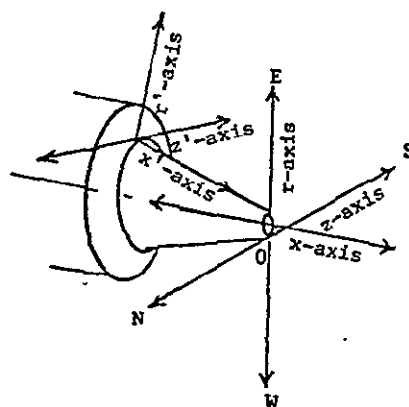
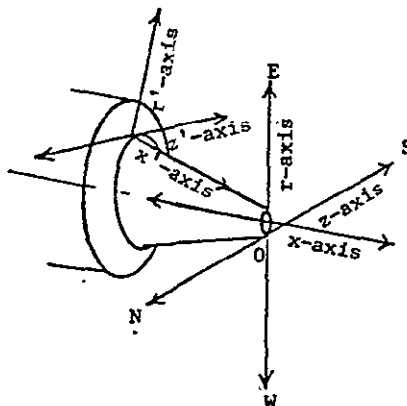


TABLE 5-23. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design @ $M_j \approx 1.4$
TEST POINT 407

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	227 - 228	-	-
		$r =$			
		$r =$			
		$r =$			
	RADIAL	$x/D =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	205 - 206	-	-
		$r =$			
		$r =$			
		$r =$			
		$r =$			
		$r =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TABLE 5-24. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design @ $M_j \approx 1.4$
TEST POINT 411

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	225 - 226	-	-
		"			
		"			
		"			
	RADIAL	$x/D =$			
		"			
		"			
		"			
		"			
		"			
		"			
		"			
		"			
		"			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	209 - 210	-	-
		"			
		"			
		"			
		"			
		"			

COORDINATE SYSTEM FOR LV MEASUREMENTS

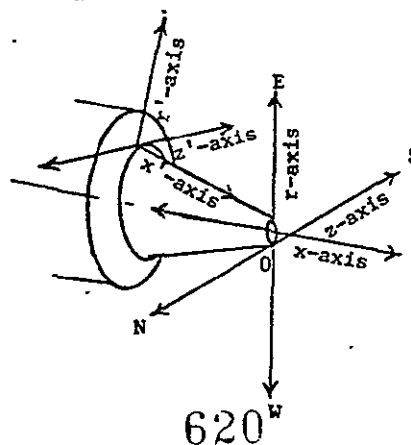


TABLE 5-25. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design at $M_j \approx 1.4$
TEST POINT 413

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	187 - 188	5	430 - 437
		$= 0.5$	189 - 190	7	447 - 455
		$= 0$	191 - 192	-	-
		$\downarrow = 0.5$	193 - 194	-	-
	RADIAL	$x/D = 0.2$	200	6	468 - 476
		$= 2.2$	199	-	-
		$= 4.2$	198	5	463 - 467
		$= 6.2$	197	-	-
		$= 8.2$	196	5	457 - 461
		$= 10.2$	195	-	-
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	201 - 202	10	477 - 486
		$= 1.0$	203 - 204	5	487 - 491
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

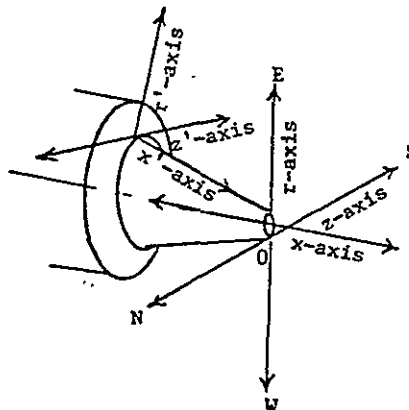


TABLE 5-26. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design at $M_j \approx 1.4$
TEST POINT 414

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	229 - 230	9	550 - 561
		$= 0.5$	231 - 232	10	562 - 572
		$=$			
		$\gamma =$			
	RADIAL	$x/D = -0.82$	239	2	595 - 596
		$= 0.1$	238	6	588 - 594
		$= 2.0$	237	-	-
		$= 4.0$	236	7	580 - 587
		$= 6.0$	235	-	-
		$= 8.0$	234	7	573 - 579
		$= 10.0$	233	-	-
		$= -1.58$	243	-	-
		$\gamma = -1.68$	241	-	-
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	244 - 245	5	603 - 608
		$= 1.0$	242	5	597 - 602
		$= 1.0$	246	-	-
		$= 1.5$	247 - 248	-	-
		$= 2.0$	249 - 250	-	-
		$\gamma = 2.5$	251 - 252	-	-
	RADIAL (CHORD-WISE)	$r'/h = 0.42 @ x'/h = 0$	240		
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			
		$=$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

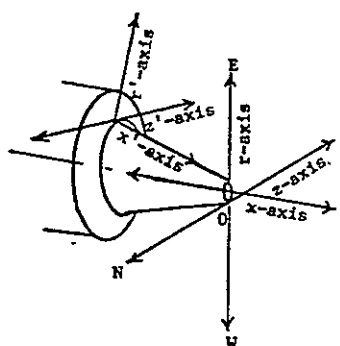


TABLE 5-27. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design @ $M_3 \approx 1.4$
TEST POINT 419

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D =$			
		$\uparrow =$			
		$\downarrow =$			
		$\downarrow =$			
	RADIAL	$x/D =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	207 - 208	-	-
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			
		$\uparrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

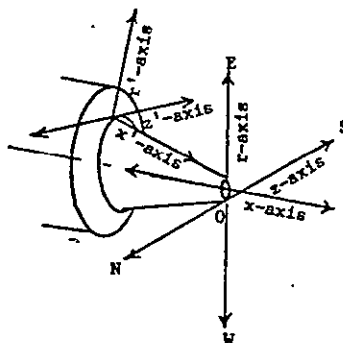


TABLE 5-28. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design at $M_j \approx 1.4$
TEST POINT 421

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	215 - 216	6	513 - 520
		$= 0.5$	217 - 218	9	521 - 532
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0$	219	5	533 - 538
		$= 2$	220	-	-
		$= 4$	221	4	539 - 542
		$= 6$	222	2	543 - 544
		$= 8$	223	5	545 - 549
		$= 10$	224	-	-
		$=$			
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	213 - 214	11	501 - 511
		$= 1.0$	211 - 212	4	497 - 500
		$=$			
		$=$			
		$=$			
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

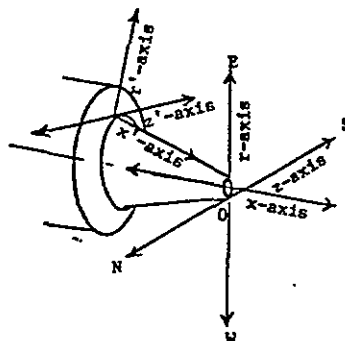


TABLE 5-29. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 4 Convergent-Divergent Annular Plug Nozzle for Design @ $M_\infty \approx 1.4$
TEST POINT 422

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	261 - 262	9	625 - 633
		$= 0.5$	263 - 264	5	634 - 640
		$=$			
		$\gamma =$			
	RADIAL	$x/D = 0$	265	2	641 - 642
		$= 1.8$	266	3	643 - 645
		$= 3.7$	267	5	646 - 650
		$=$			
		$=$			
		$=$			
		$=$			
		$\gamma =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	253 - 254	10	609 - 618
		$= 1.0$	255 - 256	5	619 - 624
		$= 1.5$	257 - 258	-	-
		$= 2.0$	259 - 260	-	-
		$=$			
		$\gamma =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

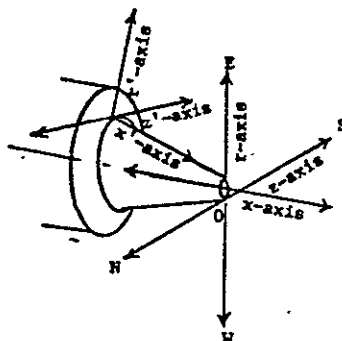


TABLE 5-30. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINTS OF POOR QUALITY
TURBULENCE HISTOGRAM LOCATIONS

MODEL 5

20 ELEMENT CONVERGENT ANNULAR SUPPRESSOR NOZZLE

TEST POINT 513

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	596 - 597	-	-
		$= 0.5$	598 - 599B	18	1377 - 1394
		$= 0.2$	636 - 637		
		$\gamma =$			
	RADIAL	$x/D = 0$	600 - 601	-	-
		$= 2$	602 - 603	13	1395 - 1407
		$= 6$	604 - 605	-	-
		$= 8$	606 - 607	11	1408 - 1418
		$=$			
		$=$			
		$=$			
		$\gamma =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	610 - 611	20	1423 - 1442
		$= 1.0$	630 - 631	21	1452 - 1472
		$=$			
		$=$			
		$\gamma =$			
	RADIAL (CHORD-WISE)	$r'/h = 0.5$ @ $x'/h = 0.14$	608	4	1419 - 1422
		$= 0.5$ @ $= 0.14$	609	-	-
		$= 0.5$ @ $= 2.3$	616 - 617	3	1443 - 1445
		$= 0.5$ @ $= 1.1$	618 - 619	3	1446 - 1448
		$= 0.5$ @ $= 3.4$	620 - 621	3	1449 - 1451
		$= 0.5$ @ $= 4.6$	622 - 623	-	-
		$= 0.5$ @ $= 5.7$	624 - 625	-	-
		$= 0.5$ @ $= 6.9$	626 - 627	-	-
		$= 0.5$ @ $= 8.1$	628 - 629	-	-
		$= 1.0$ @ $= 0.96$	632 - 635	5	1473 - 1477
		$\gamma = 1.0$ @ $\gamma = 1.93$	636 - 637	-	-

See Test Point 514 for Coordinate System for LV Measurements

TABLE 5-31. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 5 20 Element Convergent Annular Suppressor Nozzle

TEST POINT 514

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	721 - 722	-	-
		$= 0.5$	723 - 724	21	1630 - 1650
		$=$			
		$Y =$			
	RADIAL	$x/D = 0$	725 - 726	-	-
		$= 2$	727 - 728	-	-
		$= 6$	729 - 730	-	-
		$= 8$	731 - 732	12	1651 - 1662
		$= 12$	733 - 734	-	-
		$= 0$	713 - 714	-	-
		$= -0.5$	715 - 716	-	-
		$= -0.92$	717 - 718	-	-
		$Y = -1.58$	719 - 720	-	-
	SLANT TRAVERSE	$r'/h = 0.5$	701 - 702	12	1594 - 1606
		$= 1.0$	703 - 704	10	1607 - 1618
		$= 1.0$	705 - 706	10	1619 - 1629
		$= 1.25$	707 - 708	-	-
		$= 1.5$	709 - 710	-	-
		$Y = 0.3$	711 - 712	-	-

COORDINATE SYSTEM FOR LV MEASUREMENTS

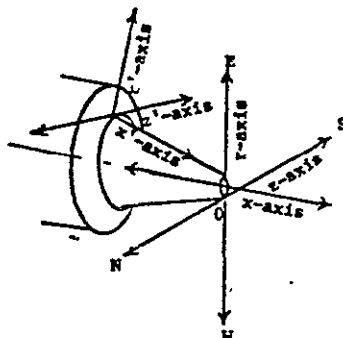


TABLE 5-32. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 5 20 Element Convergent Annular Suppressor Nozzle

TEST POINT 1513

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	638 - 639	-	-
		$= 0.5$	640 - 641	20	1478-1497
		$= 0.92$	666 - 667	-	-
		$\downarrow =$			
	RADIAL	$x/D = 0.3$	642 - 643	-	-
		$= 2.0$	644 - 645	-	-
		$= 5.6$	646 - 647	-	-
		$= 7.4$	648 - 649	10	1498-1508
		$= 9.2$	650 - 651	-	-
		$= -1.1$	658 - 659	-	-
		$= -1.53$	656 - 657	-	-
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	652 - 653	10	1509-1519
		$= 1.0$	654 - 655	17	1520-1537
		$=$			
		$=$			
		$=$			
		$\downarrow =$			
	RADIAL (CHORD-WISE)	$r'/h = 0.5$ @ $x'/h = 1.12$	664 - 665		
		$= 0.5$ $= 2.43$	662 - 663		
		$= 0.5$ $= 4.29$	660 - 661		
		$=$ $=$			
		$=$ $=$			
		$=$ $=$			
		$=$ $=$			
		$\downarrow =$ $\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

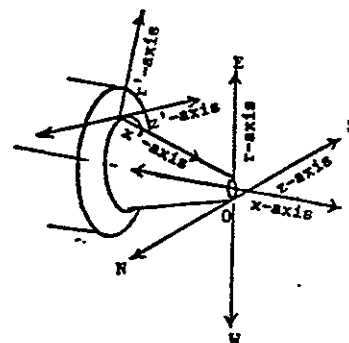


TABLE 5-33. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 5 20 Element Convergent Annular Suppressor Nozzle
TEST POINT 1514

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	668 - 669	-	-
		$= 0.5$	670 - 671	20	1538 - 1557
		$=$			
		$\gamma =$			
	RADIAL	$x/D = -0.12$	672 - 673	-	-
		$= 1.88$	674 - 675	-	-
		$= 5.9$	676 - 677	-	-
		$= 7.9$	678 - 679	11	1558 - 1568
		$= 9.8$	680 - 681	-	-
		$= 0.08$	693 - 694	-	-
		$= -0.5$	695 - 696	-	-
		$= -0.93$	697 - 698	-	-
		$\gamma = -1.35$	699 - 700	-	-
	SLANT TRAVERSE	$r'/h = 0.5$	682 - 683	4	1569 - 1572
		$= 0.5$	684	7	1573 - 1579
		$= 1.0$	685 - 686	14	1580 - 1593
		$= 1.25$	687 - 688		
		$= 1.5$	689 - 690		
		$\gamma = 0.3$	691 - 692		

COORDINATE SYSTEM FOR LV MEASUREMENTS

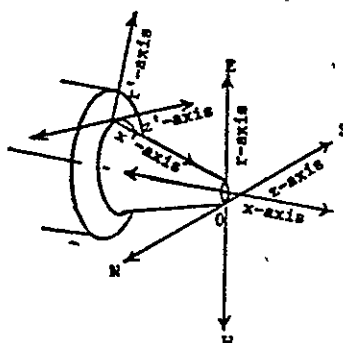


TABLE 5-34. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL o 20 Element Convergent-Divergent Annular Suppressor Nozzle for
TEST POINT 613 Design at $M_j \approx 1.4$

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	737 - 738	-	-
		$= 0.5$	739 - 740	19	1667-1686
		$= 1.0$	743 - 744	-	-
		$\downarrow =$			
	RADIAL	$x/D = 0$	741 - 742	-	-
		$= 3.4$	745 - 746	9	1687-1696
		$= 6.4$	747 - 748	-	-
		$= 8.6$	749 - 750	10	1698-1707
		$= -1.86$	751 - 752	-	-
		$= -1.56$	753 - 754	-	-
		$=$			
		$\downarrow =$			
SLANT TRAVERSE	AXIAL	$r'/h = 0.5$	755 - 756	19	1708-1727
		$= 1.0$	757 - 758	10	1728-1737
		$= 1.5$	759 - 760	-	-
		$= 0.3$	761 - 762	-	-
		$=$			
		$\downarrow =$			
	RADIAL (CHORD-WISE)	$r'/h = 0.5$ @ $x'/h = 0.78$	762A- 762B		
		$= 0.5$ $= 1.61$	763 - 764		
		$= 0.5$ $= 2.43$	765 - 766		
		$= 0.5$ $= 3.25$	767 - 768		
		$= 0.5$ $= 4.07$	769 - 770		
		$= 0.5$ $= 4.91$	771		
		$= 0.5$ $= 5.72$	772		
		$= 1.0$ $= 1.03$	773		
		$\downarrow = 0.5$ $\downarrow = 0.13$	774 - 775		

COORDINATE SYSTEM FOR LV MEASUREMENTS

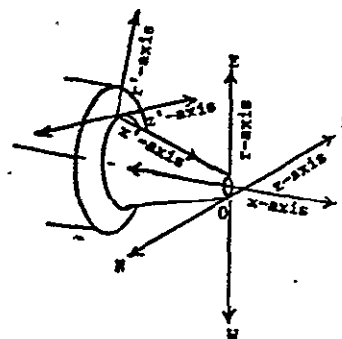
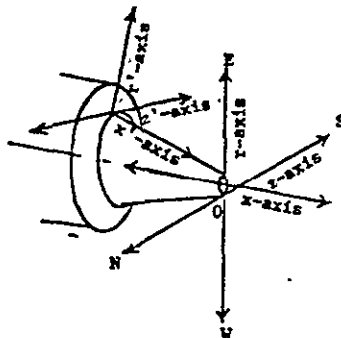


TABLE 5-35. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 6 20 Element Convergent-Divergent Annular Suppressor Nozzle
TEST POINT 614 for Design @ $M_j \approx 1.4$

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	786 - 787	-	-
		$= 0.5$	788 - 789	19	1761 - 1782
		$= 0.5$	790 - 791	4	1786 - 1789
		$\gamma = 0.5$		4	1792 - 1795
	RADIAL	$x/D = 0$	792 - 793	-	-
		$= 2.0$	794 - 795	7	1796 - 1802
		$= 6.4$	796 - 797	-	-
		$= 8.6$	798 - 799	10	1803 - 1812
		$= 12.8$	800 - 801	-	-
		$= -1.5$	802 - 803	-	-
		$= -1.1$	804 - 805	-	-
		$= -0.8$	806 - 807	-	-
		$\gamma = -0.5$	808 - 809	-	-
	SLANT TRAVERSE	$r'/h = 0.5$	778 - 779	10	1751 - 1760
		$= 1.0$	776 - 777	13	1738 - 1750
		$= 0.3$	780 - 781	-	-
		$= 1.25$	782 - 783	-	-
		$= 1.5$	784 - 785	-	-
		$\gamma =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



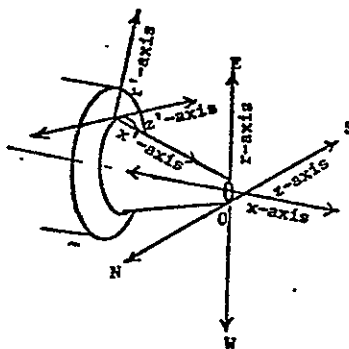
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TABLE 5-36. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT ;
TURBULENCE HISTOGRAM LOCATIONS

MODEL 6 20 Element Convergent-Divergent Annular Suppressor Nozzle for
TEST POINT 1613 Design @ $M_j \approx 1.4$

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	810 - 811	-	-
		$= 0.5$	812 - 813	20	1813 - 1832
		$=$			
		$Y =$			
	RADIAL	$x/D = 0$	814 - 815	-	-
		$= 2$	816 - 817	7	1833 - 1839
		$= 6.4$	818 - 819	-	-
		$= 8.6$	820 - 821	10	1840 - 1850
		$= 12.8$	822 - 823	-	-
		$= -1.5$	824 - 825	-	-
		$= -1.1$	826 - 827	-	-
		$= -0.7$	828 - 829	-	-
		$Y = -0.5$	830 - 831	-	-
	SLANT TRAVERSE	$r'/h = 0.5$	832 - 833	10	1851 - 1860
		$= 1.0$	834 - 835	10	1861 - 1870
		$= 1.25$	836 - 837	-	-
		$= 1.5$	838 - 839	-	-
		$= 0.84$	840 - 841	-	-
		$Y =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS



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TABLE 5-37. SCOPE OF LV MEAN VELOCITY TRAVERSES AND POINT
TURBULENCE HISTOGRAM LOCATIONS

MODEL 6 20 Element Convergent-Divergent Annular Suppressor Nozzle for
TEST POINT 1614 Design @ $M_j \approx 1.4$

Type of Syst.	Type of Traverse	MEAN VELOCITY TRAVERSES		TURBULENCE HISTOGRAMS	
		MEASURED FLOW REGIONS	GRAPH ID. NUMBER	NO. OF HISTO. & MEASURED LOCATION	HISTOGRAM NO.
NORMAL TRAVERSE	AXIAL	$r/D = 0$	842 - 843	-	-
		$= 0.48$	844 - 845	19	1871 - 1890
		$=$			
		$\downarrow =$			
	RADIAL	$x/D = 0$	846 - 847	-	-
		$= 2$	848 - 849	7	1891 - 1897
		$= 6.4$	850 - 851	-	-
		$= 8.5$	852 - 853	13	1899 - 1911
		$= 12.8$	854 - 855	-	-
		$= -1.9$	856 - 857	-	-
		$= -1.4$	858 - 859	-	-
		$= -1.1$	860 - 861	-	-
		$= -0.7$	862 - 863	-	-
		$\downarrow = -0.4$	864 - 865	-	-
	SLANT TRAVERSE	$r'/h = 0.2$	866 - 867	-	-
		$= 1.0$	868 - 869	23	1912 - 1934
		$= 0.5$	870 - 871	10	1935 - 1945
		$= 1.5$	872 - 873		
		$\downarrow =$			

COORDINATE SYSTEM FOR LV MEASUREMENTS

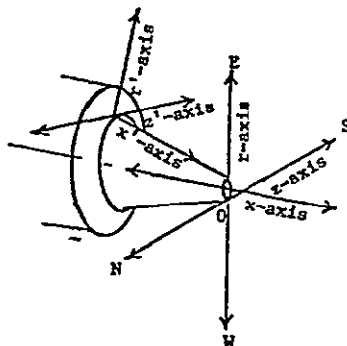


TABLE 5-38. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 3/29/82

MODEL = 1 $P_r = 3.128$ $V_j = 2402$ Ft/Sec $D_{eq} = 5.09$ In.

TEST POINT = 113 $T_T = 1703^\circ R$ $V_{a/c} = 0$ Ft/Sec $h = -$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF.		1.883	7.000	13.902	EXIT ON JET AXIS					
400		AX		.	7.013			0	.	.	AX. TRAVS. ON JET AXIS	
401				.	"				.	.		
402				.	7.013				.	.		
403				.	"			↓	.	.		
404				.	7.781			0.5	.	.	AX. TRAVS. ON $r/D_{eq}=0.5$	
405				.					.	.		
	926			1.958				1.04		2426	95	
	927			1.958				1.04		2429	90	
	928			2.000				1.63		1732	307	
	929			1.958				1.04		2390	124	HISTO. MEASURED AXIALLY
	930			2.041				2.20		2109	228	ON $r/D_{eq}=0.5$
	931			2.080				2.74		1745	398	
	932			2.140				3.57		1830	326	
	933			2.099				3.00		1626	363	
	934	↓		2.180	↓	↓		4.13	↓	1589	416	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

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TABLE 5-38. AERODYNAMIC TEST RESULTS BY

TEST DATE 3/29/82

LASER DOPPLER VELOCIMETER (CONTINUED)

MODEL = 1 $P_r = 3.128$ $V_j = 2402$ Ft/Sec $D_{eq} = 5.09$ In.

TEST POINT = 113 $T_T = 1703$ °R $V_{a/c} = 0$ Ft/Sec $h = -$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	935	AX		2.200	7.781	13.902		4.41	0.5	1621	357	
	936			2.240				4.96		1763	430	
	937			2.280				5.52		1519	378	
	938			2.320				6.08		1666	363	
	939			2.360				6.63		1522	400	
	940			2.400				7.19		1605	392	HISTO MEASURED AXIALLY
	941			2.440				7.74		1516	393	ON $r/D_{eq} = 0.5$ (CONTINUED)
	942			2.513				8.76		1517	385	
	943			2.597				9.93		1452	407	
	944			2.695				11.3		1323	382	
	945			2.774				12.4		1227	371	
	946			1.924				0.57		2395	72	
	947			1.972				1.24		2137	284	
	948			2.016				1.85		2028	225	
	949			2.060				2.46		2072	290	
	950	✓		2.122	✓	✓		3.32	✓	1889	308	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

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TABLE 5-38. AERODYNAMIC TEST RESULTS BY

TEST DATE 3/29/82

LASER DOPPLER VELOCIMETER (CONCLUDED)

MODEL = 1 $P_r = 3.128$ $V_j = 2402$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 113 $T_T = 1703$ °R $V_{a/c} = 0$ Ft/Sec $h = -$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	951	AX		2.161	7.781	13.962		3.88	0.5	1811	360	HISTO. MEASURED AXIALLY ON $x'/D_{eq} = 0$. (CONCLUDED)
406		EW		1.891	.			0.08	.	.	.	
407				"	.			0.08	.	.	.	
408				1.962	.			1.07	.	.	.	RADIAL TRANS. ON $x'/D_{eq} = 0.08, 1.07, 4.3$ AND 8.6, RESPECTIVELY
409				"	.			1.07	.	.	.	
410				2.194	.			4.3	.	.	.	
411				"	.			4.3	.	.	.	
412				2.502	.			8.6	.	.	.	
413					.			8.6	.	.	.	
	952				7.753				0.49	1574	431	HISTO. MEASURED RADIAUALLY ON $x'/D_{eq} = 8.6$
	953				8.067				0.70	1621	397	
	954				7.518				0.34	1001	324	
	955	NOT RECORDED			.				.	.	.
	956				7.253				0.17	2229	230	
	957				7.011				0.01	2271	195	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-39. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 3/30/82

MODEL = 1 $P_r = \underline{3.316}$ $V_j = \underline{2457}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.
 TEST POINT = 121 $T_T = \underline{1708}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{\quad}$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF.		1.884	7.018	13.902	EXIT ON JET AXIS					
414		AX		NOT RECORDED								
415												
416				1.884	7.018				0			AX. TRAVERS. ON JET AXIS
417				"	"				"			
418		EW		1.891	.			0.1	.			
419				"	"			"	.			
420				1.962	.			1.1	.			RADIAL TRAVERS. ON
421				"	.			"	.			$x/D_{eq} = 0.1, 1.1$ AND 4.2,
422				2.194	.			4.2	.			RESPECTIVELY
423				"	.			"	.			
424		AX		.	7.748			.	0.5			AX. TRAVERS. ON $x/D_{eq} = 0.5$
425				.	"			.	"			
426		EW		2.502	.			8.5	.			RADIAL TRAVERS. ON $x/D_{eq} = 8.5$
427				"	.			"	.			

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-39. AERODYNAMIC TEST RESULTS BY

TEST DATE 3/30/82

LASER DOPPLER VELOCIMETER

(CONTINUED)

MODEL = 1 $P_r = 3.316$ $V_j = 2457$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 121 $T_T = 1708$ °R $V_{a/c} = 0$ Ft/Sec $h = -$ In.ORIGINAL PAGE 13
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	958	EW		2.502	7.012	13.902		8.5	0	2477	176	
	959				7.253				0.16	2420	198	
	960				7.253					2379	226	
	961				7.253					2211	661	HISTO. MEASURED
	962				7.253				↓	2413	203	RADIALLY ON $x/D_{eq} = 8.5$
	963				7.508				0.32	2126	325	
	964				7.508				'	2127	336	
	965				7.753				0.48	1672	416	
	966				8.064				0.69	1084	373	
	967	↓		↓	8.064			↓	"	1188	362	
	968	AX		1.924	7.748			0.56	0.48	2497	77	
	969			1.969				1.18		2492	117	
	970			2.005				1.68		1998	326	HISTO. MEASURED
	971			2.005				1.68		1862	557	AXIALLY ON $r/D_{eq} = 0.48$
	972			2.005				1.68		1961	314	
	973	↓		2.060	↓	↓		2.45	↓	2409	198	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus HeightORIGINAL PAGE 14
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TABLE 5-39. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (CONTINUED)TEST DATE 3/30/82MODEL = 1 $P_r = \underline{3.3/6}$ $V_j = \underline{24.57}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.TEST POINT = 121 $T_T = \underline{1708}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{-}$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	974	AX		2.112	7.748	13.902		3.17	0.48	1827	360	
	975	↓		2.164	"			3.89	"	2119	280	
428		AX		.	7.798			.	0.51	.	.	AX TRAVS. ON $r/D_{eq} = 0.5$
429		↑		.				.		.	.
	976			1.943				0.82		2532	633	
	978			1.997				1.57		1846	330	
	978			2.050				2.31		2271	187	
	979			2.111				3.16		1753	370	
	980			2.164				3.89		1983	355	
	981			2.202				4.42		1748	397	HISTO. MEASURED
	982			2.238				4.92		1844	352	AXIALLY ON $r/D_{eq} = 0.5$
	983			2.281				5.52		1790	409	
	984			2.320				6.06		1700	379	
	985			2.360				6.62		1772	413	
	986			2.400				7.17		1852	385	
	987	↓		2.442	↓	↓		7.76	↓	1758	401	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-39. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (CONCLUDED)

TEST DATE 3/30/82

MODEL = 1 $P_r = \underline{3.316}$ $V_j = \underline{2457}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.

TEST POINT = 121 $T_T = \underline{1708}^{\circ}R$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{-}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	988	AX		2.513	7.798	13.772		8.75	0.51	1719	401	
	989			2.597				9.91		1611	409	
	990			2.695				11.28		1459	406	
	991			2.774				12.37		1377	379	
	992			1.922				0.53		2466	74	
	993			1.972				1.22		2431	260	
	994			2.018				1.86		1917	275	
	995			2.035				2.09		2134	292	HISTO. MEASURED AXIALLY
	996			2.073				2.63		2135	322	ON $\gamma_{0.5} = 0.5$
	997			2.092				2.89		1794	402	
	998			2.131				3.43		1849	316	
	999			2.149				3.68		1911	338	
	1000			2.185				4.19		1763	397	
	1101	↓		2.149	↓			3.68	↓	1921	317	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

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TABLE 5-40. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 3/31/82MODEL = 1 $P_r = 3.323$ $V_j = 2463$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 122 $T_T = 1715$ °R $V_{a/c} = 400$ Ft/Sec $h = -$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.883	7.009	13.850	EXIT ON	JET	AXIS			
	1002		NOT RECORDED					.	.	.	.
	1003			.	.			.	.	.	.
430		AX		.	7.018			.	0	.	.	} AX TRAVS. ON $r/D_{eq} = 0$ AND 0.5, RESPECTIVELY.
431				.	"			.	"	.	.	
432				.	7.808			.	0.5	.	.	
433				.	"			.		.	.	
	1004			2.774	7.808			12.37		1413	332	
	1005			2.695				11.28		1542	328	
	1006			2.644				10.57		1533	359	
	1007			2.605				10.02		1670	397	} HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1008			2.584				9.45		1684	360	
	1009			2.527				8.94		1734	329	
	1110			2.488				8.40		1689	399	
	1111			2.488				8.40		1650	361	
	1112	✓		2.445	✓	✓		7.80	✓	1757	325	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-40

AERODYNAMIC TEST RESULTS BY

TEST DATE 3/31/82

LASER DOPPLER VELOCIMETER (CONTINUED)

MODEL = 1 $P_r = 3.323$ $V_j = 2463$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 122 $T_T = 1715^\circ R$ $V_{a/c} = 400$ Ft/Sec $h = -$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1013	AX		2.411	7.808	13.850		7.33	0.5	1607	353	
	1014			2.364				6.67		1876	315	
	1015			2.319				6.05		1613	331	
	1016			2.257				5.19		1896	303	
	1017			2.203				4.44		1784	369	
	1018			2.161				3.85		2036	295	
	1019			2.102				3.03		1822	357	
	1020			2.045				2.24		2321	186	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$ (CONTINUED)
	1021			2.156				3.78		2042	272	
	1022			1.995				1.54		2007	333	
	1023			1.944				0.83		2513	70	
	1024			1.925				0.57		2439	85	
	1025			1.975				1.27		2388	208	
	1026			2.025				1.95		2184	218	
	1027			2.075				2.66		2211	318	
	1028	V		2.127	V	V		3.38	V	1868	276	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-40. AERODYNAMIC TEST RESULTS BY

TEST DATE 3/31/82

LASER DOPPLER VELOCIMETER (CONTINUED)

MODEL = 1 $P_r = 3.323$ $V_j = 2463$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 122 $T_T = 1715$ °R $V_{a/c} = 400$ Ft/Sec $h = -$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1029	AX		2.181	7.808	13.850		4.13	0.5	1992	336	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1030			2.232				4.84		1761	183	
	1031	↓		2.290	↓			5.64	↓	1855	338	
434		EW		1.889	.			0.0	.	.	.	
435				.	.			"	.	.	.	
436				1.760	.			1.0	.	.	.	
437				.	.			"	.	.	.	RADIAL TRANS. ON $x/D = 0, 1.0, 4.2, 8.5$, RESPECTIVELY.
438				2.192	.			4.2	.	.	.	
439				.	.			"	.	.	.	
440				2.500	.			8.5	.	.	.	
441					.				.	.	.
	1032				7.013				0	2199	117	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 8.5$
	1033				7.253				0.16	1964	719	
	1034				7.253				0.16	2213	122	
	1035				7.518				0.33	2140	214	
	1036	↓		↓	7.753	↓		↓	0.48	1783	319	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

LASER DOPPLER VELOCIMETER (CONCLUDED)

MODEL = 1 $P_r = 3.323$ $v_i = 2463$ Ft/Sec $D_{eq} = 5.09$ In.

TEST POINT = 122 $T_T = \underline{1715}^{\circ}\text{R}$ $v_{a/c} = \underline{400}$ Ft/Sec $h = \underline{\quad}$ In.

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[illegible]

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

 $V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-41. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 3/31/82

MODEL = 1 $P_r = \underline{3.128}$ $V_j = \underline{2425}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.

TEST POINT = 114 $T_T = \underline{1734}^{\circ}R$ $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{\quad}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.881	7.018	13.843	EXIT ON	JET AXIS				
442		AX		.	7.018			.	0	.	.	AX. TRAVS. ON $\gamma/D_{eq} = 0$ AND 0.5, RESPECTIVELY
443				.	"			.	"	.	.	
444				.	7.807			.	0.5	.	.	
445				.	"			.	.	.	.
	1038			1.939	7.807			0.76	0.5	2438	78	
	1039			1.956				1.00		2447	95	
	1040			1.991				1.49		1861	326	
	1041			1.997				1.29		2000	320	
	1042			2.020				1.89		2169	219	
	1043			2.050				2.31		2238	239	HISTO. MEASURED AXIALLY ON $\gamma/D_{eq} = 0.5$
	1044			2.077				2.68		1845	360	
	1045			2.096				2.95		1717	179	
	1046			2.119				3.27		1888	289	
	1047			2.138				3.53		2005	271	
	1048			2.161				3.85		1863	339	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-41. AERODYNAMIC TEST RESULTS BY

TEST DATE 3/31/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 1 $P_r = 3.128$ $V_j = 2425$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 114 $T_T = 1734$ °R $V_{a/c} = 400$ Ft/Sec $h = -$ In.ORIGINAL PAGE 13
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1049	AX		2.189	7.807	13.863		4.24	0.5	1604	345	
	1050			2.231				4.82		1882	299	
	1051			2.271				6.39		1730	367	
	1052			2.317				6.02		1819	300	
	1053			2.353				6.52		1784	339	HISTO. MEASURED
	1054			2.395				7.10		1771	317	AXIALLY ON $r/D_{eq} = 0.5$
	1055			2.488				8.40		1783	328	(CONTINUED)
	1056			2.567				9.50		1729	339	
	1057	↓		2.694	↓			11.26	↓	1550	343	
446		EW		1.889	.			0	.	.	.	
447				'	.			'	.	.	.	RADIAL TRAVS. ON
	1058			NOT RECORDED				.	.	.	.	$x/D_{eq} = 0$ AND 3,
448				2.097	.			2.96	.	.	.	RESPECTIVELY.
449				↓	.			↓	.	.	.	
	1059			↓	7.636			↓	0.40	2212	115	HISTO. MEASURED
	1060	↓		↓	7.044	↓		↓	0.02	2029	77	RADIALY ON $x/D_{eq} = 3$

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-42. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 4/7/82

MODEL = 2 $P_r = 3.309$ $V_j = 2447$ Ft/Sec $D_{eq} = 5.09$ In.

TEST POINT = 221 $T_T = 1697$ °R $V_{a/c} = 0$ Ft/Sec $h = -$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.977	6.972	13.544	EXIT ON JET AXIS					
4000		AX		.	7.729			.	0.53	.		AX TRAVERS. ON $r/D_{eq}=0.53$
4001				.				.		.		
	4000			3.000				14.22		1174	351	
	4001			2.666				9.58		1452	376	
	4002			2.520				7.55		1581	409	
	4003			2.377				5.56		1567	396	
	4004			2.552				7.98		1482	382	
	4005			2.184				2.88		1404	378	HISTO. MEASURED AXIALLY
	4006			2.157				2.50		1424	379	ON $r/D_{eq}=0.53$
	4007			2.084				1.49		1198	367	
	4008			2.064				1.21		1128	347	
	4009			2.035				0.81		974	324	
	4010			2.118				1.96		1270	373	
	4011	↓		2.217	↓			3.34	↓	1347	349	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

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TABLE 5-41. AERODYNAMIC TEST RESULTS BY

TEST DATE 3/31/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 1 $P_r = 3.128$ $V_j = 2425$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 114 $T_T = 1734$ °R $V_{a/c} = 400$ Ft/Sec $h = -$ In.ORIGINAL PAGE 11
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1061	EW		2.097	6.427	13.843		2.96	-0.39	2212	128	SEE HISTO NO. 1061 FOR REMARK
450				2.145	.			3.63	.	.	.	RADIAL TRAVS. ON $x/D_{eq} = 3.6$
451					.							
	1062				7.670				0.43	2473	114	HISTO. MEASURED RADIALLY
	1063				7.041				0.02	2690	148	ON $x/D_{eq} = 3.6$
452				2.195	.			4.3	.	.	.	RADIAL TRAVS. ON $x/D_{eq} = 4.3$
453					.							
	1064				NOT RECORDED							
	1065											
454				2.500	.			8.6	.			RADIAL TRAVS. ON $x/D_{eq} = 8.6$
455					.							
	1066				7.010				-0.01	2552	120	HISTO. MEASURED RADIALLY
	1067				7.253				0.15	2537	119	ON $x/D_{eq} = 8.6$
	1068				7.516				0.32	2330	238	
456		AX		.	7.018			.	0	.	.	AX. TRAVS. ON JET AXIS
457				.	.			.	.	.	.

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-42. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Concluded)

TEST DATE 4/7/82

MODEL = 2 $P_r = \underline{3.309}$ $V_j = \underline{2447}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.
 TEST POINT = 22/ $T_T = \underline{1697}^\circ R$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{\quad}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
4002		AX		.	6.906	13.544		.	0	.	.	AX. TRAVS. ON JET AXIS
4003		↓		.	↓			.	.	.	.
4004		EW		2.593	.			8.6	.	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 8.6$
4005					.				.	.	.
	4012				8.111				0.78	880	305	
	4013				7.740				0.53	1435	376	
	4014				7.436				0.34	2031	327	HISTO. MEASURED ON
	4015				7.183				0.17	2366	208	$x'/D_{eq} = 8.6$
	4016				6.913				0	2449	108	
	4017			↓	6.755			↓	-0.11	2430	114	
4006				2.285	.			4.3	.	.	.	
4007				.	.			.	.	.	.
4008				2.053	.			1.1	.	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 4.3$,
4009				.	.			.	.	.	.	1.1 AND 0.1, RESPECTIVELY
4010				1.982	.			0.07	.	.	.	
4011		↓		.	.	↓		.	.	.	.

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-43. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 4/7/82

MODEL = 2 $P_r = \underline{3.018}$ $V_j = \underline{2372}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.
TEST POINT = 207 $T_T = \underline{1707}^{\circ}R$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{-}$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.977	6.856	13.743	EXIT ON JET AXIS		.	.		
4012		AX		.	6.856			.	0	.	.	AX. TRAVERS. ON JET AXIS AND $r/D_{eq} = 0.54$, RESPECTIVELY
4013				.	"			.	"	.	.	
4014				.	7.689			.	0.54	.	.	
4015				.	"			.		.	.	
	4018			3.002	7.689			14.25		1098	318	
	4019			2.768				11.00		1280	379	
	4020			2.620				8.94		1413	369	
	4021			2.490				7.13		1489	387	HISTO. MEASURED
	4022			2.406				5.96		1454	369	AXIALLY ON $r/D_{eq} = 0.54$
	4023			2.313				4.67		1419	369	
	4024			2.238				3.63		1413	367	
	4025			2.154				2.66		1395	382	
	4026			2.099				1.70		1306	358	
	4027		NOT RECORDED					-		-	-	
	4028	↓		2.048	↓	↓		0.99	↓	1151	369	

NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

$V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-44. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 4/7/82MODEL = 2 $P_r = \underline{3.074}$ $V_j = \underline{2390}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.TEST POINT = 211 $T_T = \underline{1709}^\circ R$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{-}$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.977	6.856	13743	EXT ON JET AXIS			.	.	
4016		AX		.	7.689			.	0.54	.	.	AX. TRAVS. ON $r/D_{eq}=0.54$
4017				.				.		.	.
	4029			3.000				14.2		1140	329	
	4030			2.751				10.8		1289	367	
	4031			2.653				9.4		1406	346	
	4032			2.548				7.9		1501	365	
	4033			2.450				6.6		1509	365	HISTO. MEASURED AXIALLY ON $r/D_{eq}=0.54$
	4034			2.349				5.2		1496	389	
	4035			2.252				3.8		1423	361	
	4036			2.226				3.5		1407	350	
	4037			2.162				2.6		1387	369	
	4038			2.106	↓			1.8	↓	1315	346	
4018				.	6.856			.	0.0	.	.	AX. TRAVS. ON JET AXIS
4019		↓		.	.			.	.	.	.
	4019	NOT RECORDED		.	.	↓		.	.	.	.

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-45. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 4/7/82MODEL = 2 $P_r = \underline{3.121}$ $V_j = \underline{2403}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.TEST POINT = 213 $T_T = \underline{1708}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{-}$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.977	6.856	13.743	EXIT ON JET AXIS			.	.	
4020		AX		.	6.851			.	0	.	.	
4021				.	'			.	'	.	.	
4022				.	7.701			.	0.55	.	.	AX. TRAVS. ON $r/D_{eq} = 0, 0.55,$ AND 0.51, RESPECTIVELY.
4023				.	'			.	'	.	.	
4024				.	7.641			.	0.51	.	.	
4025				.	'			.	'	.	.	
	4040			2.863	7.701			12.32	0.55	1205	325	
	4041			2.745				10.68		1268	369	
	4042			2.668				9.61		1334	358	
	4043			2.585				8.45		-	-	HISTO. AXIALLY MEASURED ON $r/D_{eq} = 0.55$
	4044			'				'		1433	373	
	4045			2.511				7.42		1458	379	
	4046			2.432				6.33		1478	381	
	4047			2.368				5.44		1442	359	
	4048	↓		2.267	↓	↓		4.03	↓	1419	368	

NOMENCLATURE

 P_r = Pressure Ratio T_T = Total Temperature V_j = Fully Expanded Jet Velocity $V_{a/c}$ = Free Jet Velocity D_{eq} = Equivalent Diameter h = Annulus Height

TABLE 5-45. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/7/82

LASER DOPPLER VELOCIMETER

(Continued)

MODEL = 2 $P_r = 3.121$ $V_j = 2403$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 213 $T_T = 1708$ °R $V_{a/c} = 0$ Ft/Sec $h = -$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	4049	AX		2.191	7.701	13.743		2.98	0.55	1375	374	SEE PREVIOUS PAGE FOR REMARKS
	4050	↓		2.114	"			1.90	"	1280	353	
4026		EW		1.982	.			0	.	.	.	
4027				"	.			"	.	.	.	
4028				2.052	.			1.1	.	.	.	
4029				"	.			"	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 0$, 1.1, 4.3, AND 8.6, RESPECTIVELY
4030				2.285	.			4.3	.	.	.	
4031				"	.			"	.	.	.	
4032				2.593	.			8.6	.	.	.	
4033				"	.				.	.	.
	4051			2.593	7.904				0.68	1073	334	
	4052				7.697				0.55	1412	364	
	4053				7.464				0.60	1894	354	HISTO. MEASURED RADIALY ON $x/D_{eq} = 8.6$
	4054				7.267				0.27	2222	253	
	4055				6.938				0.05	2417	126	
	4056	↓		↓	6.753	↓		↓	-0.07	2407	125	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-45. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER (Concluded)

TEST POINT = 213 $T_T = 1708$ °R $V_{\text{jet}} = 0$ Ft/Sec $h = -$ in.

NOMENCLATURE

P_r = Pressure Ratio

V_i = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-46. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 4/8/82

MODEL = 2 $P_r = \underline{3.121}$ $V_j = \underline{2609}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.

TEST POINT = 214 $T_T = \underline{1716}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{-}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.965	6.959	13.753						
4036		AX		1.971				.	0	.	.	
4037				.				.	"	.	.	
4038				.	7.726			.	0.5	.	.	AX. TRAVERS. ON $r/D_{eq} = 0$ AND
4039				.				.		.	.	0.5, RESPECTIVELY
	4059			3.002				14.4		1198	292	
	4060			2.916				13.2		1243	295	
	4061			2.831				12.0		1264	307	
	4062			2.746				10.9		1315	309	
	4063			2.672				9.8		1354	318	HISTO. MEASURED AXIALLY
	4064			2.597				8.8		1443	346	ON $r/D_{eq} = 0.5$
	4065			2.505				7.5		1489	344	
	4066			2.437				6.6		1465	354	
	4067			2.354				5.4		1407	328	
	4068	V		2.257	V	V		4.1	V	1311	330	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-46. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/8/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 2 $P_r = 3.121$ $V_j = 2409$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 214 $T_T = 1716$ °R $V_{a/c} = 400$ Ft/Sec $h = -$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
4040		EW		2.589	.	13.753		8.7	.	.	.	RADIAL TRAVERS. ON $X/D_{eq} = 8.7$
4041					.				.	.	.
	4069				8.892				1.26	378	56	
	4070				8.315				0.88	711	190	
	4071				7.990				0.67	1050	296	
	4072				6.961				0.00	2386	10.3	HISTO. MEASURED RADIALLY ON $X/D_{eq} = 8.7$
	4073				7.224				0.17	2338	147	
	4074				7.508				0.38	1994	291	
	4075			↓	7.774			↓	0.53	1499	354	
4042				2.281	.			4.4	.	.	.	
4043				,	.			,	.	.	.	
4044				2.049	.			1.2	.	.	.	RADIAL TRAVERS. ON $X/D_{eq} = 4.4, 1.2$ AND 0.2, RESPECTIVELY
4045				,	.			,	.	.	.	
4046				1.978	.			0.2	.	.	.	
4047		↓		,	.	↓		,	.	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-47. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 4/8/82

MODEL = 2 $P_r = \underline{3.312}$ $V_j = \underline{2455}$ Ft/Sec $D_{eq} = \underline{5.09}$ In.

TEST POINT = 222 $T_T = \underline{1707}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{-}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		1.975	6.949	13.753	EXIT ON	JET AXIS				
4048		AX		.	↓			0	.	.		
4049				.	↓			'	.	.		AX. TRAVERS. ON $r/D_{eq} = 0$,
4050				.	7.746			0.52	.	.		AND 0.52, RESPECTIVELY
4051				.					.	.		
	4076			3.002				14.3		1292	327	
	4077			2.911				13.0		1332	318	
	4078			2.826				11.8		1365	333	
	4079			2.742				10.7		1429	326	
	4080			2.654				9.4		1508	345	HISTO. MEASURED AXIALLY
	4081			2.560				8.1		1554	364	ON $r/D_{eq} = 0.52$
	4082			2.477				7.0		1582	384	
	4083			2.394				5.8		1495	386	
	4084			2.325				4.9		1430	368	
	4085	↓		2.230	↓	↓		3.5	↓	1367	358	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-47. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/8/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 2 $P_r = 3.312$ $V_j = 2455$ Ft/Sec $D_{eq} = 5.09$ In.TEST POINT = 222 $T_T = 1707$ °R $V_{a/c} = 400$ Ft/Sec $h = -$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
4052		EW		1.978	.	13.753		0	.	.	.	
4053				"	.			"	.	.	.	
4054				2.049	.			1.0	.	.	.	
4055				"	.			"	.	.	.	
4056				2.281	.			4.3	.	.	.	
4057				"	.			"	.	.	.	
4058				2.589	.			8.5	.	.	.	
4059				"	.			"	.	.	.	
	4086			NOT RECORDED				-	-	.	.	
	4087			2.589	8.104			8.5	0.75	868	249	
	4088				7.749				0.52	1381	358	
	4089				7.527				0.38	1973	326	
	4090				7.258				0.20	2342	180	
	4091	↓		↓	6.950	↓		↓	0.00	2411	101	

RADIAL TRAVERS. ON $x/D_{eq} = 0$,
1.0, 4.3 AND 8.5,
RESPECTIVELY.HISTO. MEASURED RADIALY
ON $x/D_{eq} = 8.5$

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-48. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 10/13/82

MODEL = 3 $P_r = 3.061$ $V_j = 2394$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 309 $T_T = 1719^\circ R$ $V_{a/c} = 0$ Ft/Sec $h = 0.811$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.696	0.874	6.888	13.660	PLUG TIP					
87		AX		.	↓	↓	.	.	0	.	.	AX. TRAVS. ON JET AXIS
88				.	↓	↓	.	.		.	.
	227			1.052	6.907	13.714	.	2.2		2081	196	HISTO. MEASURED AXIALLY ON JET AXIS
	228			1.083	↓		.	2.6		1986	214	
	229			1.105	↓		.	2.9		2076	189	
	230			1.069	↓		.	2.4	↓	2014	205	
89				.	7.762		.	.	0.59	.	.	AX. TRAVS. ON $r'/D_{eq} = 0.59$
90				.	"		.	.	↓	.	.	
91		SLANT AX	.	0.674	5.556		.	.	SLANT $r'/h = 0.5$.	.	SLANT AX. TRAVS ON $r'/h = 0.5$
92			.	↓	↓		.	.	↓	.	.	
93			.	↓	↓		.	.	↓	.	.	
94		↓	.	↓	↓	↓	.	.	↓	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-49. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 10/13/81MODEL = 3 $P_r = 3.146$ $V_j = 2439$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 3/3 $T_T = 1747$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
95		SLANT AX	.	0.670	5.588	13.718	.		SLANT $r'/h = 0.5$.	.	
96			.		"		.		"	.	.	
97			.		5.663		.		1.0	.	.	
98			.		"		.		"	.	.	
99			.		5.772		.		1.5	.	.	
100			.		"		.		"	.	.	
101			.		5.855		.		2.0	.	.	
102			.		"		.		"	.	.	
103			.		5.568		.		0.5	.	.	
	231		1.029				0.0			2580	186	
	232		1.324				0.8			2528	106	
	233		1.560				1.45			2238	128	
	234		1.718				1.89			2168	111	
	235		2.009				2.66			2327	84	
	236		2.297				3.48			2469	104	
	237	↓	2.669	↓	↓	↓	4.5		↓	2547	120	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-49. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/13/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = 3.146$ $V_j = 2439$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 3/3 $T_T = 1747$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.8/$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	238	SLANT AX	2.938	0.670	5.568	13.718	5.2		SLANT $r'/h=0.5$	2526	104	
	239		3.143				5.8			2437	112	HISTO. MEASURED
	240		3.401				6.5			2207	117	SLANT-AXIALLY
	241		3.571				7.0			2225	109	ON $r'/h=0.5$ (CONTINUED)
	242		3.850	↓			7.7		↓	2332	133	
	243		NOT RECORDED				-		.	-	-	
	244						-		.	-	-	
	245		2.207		5.772		6.0		SLANT $r'/h=1.0$	2210	214	
	246		2.927				8.0			2345	190	HISTO. MEASURED
	247		1.127				3.0			2167	321	SLANT-AXIALLY
	248	↓	0.407	↓	↓		1.0		↓	1981	323	ON $r'/h=1.0$
	249	AX		1.676	0.888		.	10.0	0	1712	336	
	250			1.515			-	8.0		2046	270	HISTO. MEASURED
	251			1.355			-	6.0		2209	252	AXIALLY ON JET AXIS
	252			1.175			-	4.0		2073	578	
	253			1.034	↓	↓	-	2.0	↓	2064	204	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus HeightORIGINAL PAGE NO.
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TABLE 5-49. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/13/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = 3.146$ $V_j = 2439$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 3/3 $T_T = 1747$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
104		SLANT AX	-	0.677	5.689	13.718	.	.	SLANT $r'/h = 1.0$.	.	SLANT-AX. TRAVERS. ON $r'/h = 1.0$
105		AX		-	6.888		.	.	0	.	.	
106				-	6.888		.	.	'	.	.	AX. TRAVERS. ON $r'/D_{eq} = 0$ AND 0.5, RESPECTIVELY
107				-	7.744		.	.	0.5	.	.	
108				-			.	.		.	.
	254	NOT RECORDED					.	.				
	255	AX		0.796			.	9.0		1323	386	HISTO. MEASURED AXIALLY ON $r'/D_{eq} = 0.5$
	256						.	7.0		1543	406	
	257						.	5.0		1783	423	
	258						.	3.0		1804	377	
	259						.	2.0		1809	373	
	260						.	1.5		1803	373	
	261						.	1.0		1761	376	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-49. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 10/15/81

MODEL = 3 $P_r = \underline{3.146}$ $V_j = \underline{2439}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.

TEST POINT = 313 $T_T = \underline{1747}$ °R $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{0.81}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.045	0.859	6.872	14.031	PLUG TIP					
109		EW		0.863	-			0	-	-	-	RADIAL TRAVS. ON $x'/D_{eq} = 0$
	262				6.246				0.40	2334	126	
	263				6.091				0.47	2306	182	HISTO. MEASURED RADIALY
	264				5.931				0.56	1757	353	ON $x'/D_{eq} = 0$
	265			↓	5.777			↓	0.65	1043	333	
110				1.024	-			2.0	-	-	-	RADIAL TRAVS. ON $x'/D_{eq} = 2$
111				1.185	-			4.0	-	-	-	AND 4, RESPECTIVELY
	266				6.688				0.12	2270	200	
	267				6.456				0.25	2315	222	HISTO. MEASURED
	268				6.262				0.37	1876	677	RADIALY ON $x'/D_{eq} = 4$
	269				"				"	-	-	
	270				"				"	1768	755	
	271	↓		↓	5.778	↓		↓	0.65	505	264	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

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TEST DATE 10/15/81

MODEL = 3 $P_r = 3.146$ $V_j = 2439$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 313 $T_T = \underline{1747}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{0.81}$ In.

[illegible]

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$$V_{a/c} = \text{Free Jet Velocity}$$

h = Annulus Height

TABLE 5-50. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 10/15/81

MODEL = 3 $P_r = \underline{3.320}$ $V_j = \underline{2476}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.
TEST POINT = 321 $T_T = \underline{1733}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{0.81}$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.045	0.869	6.884	13.677	PLUG TIP			.	.	
117		EW		0.872	-			0.0	-	.	.	RADIAL TRAVS. ON $x/D_{eq} = 0$
	277				5.774				0.65	1084	362	
	278				5.930				0.56	1828	327	HISTO. MEASURED RADIALY
	279				6.096				0.46	2315	169	ON $x/D_{eq} = 0$
	280				6.218				0.39	2317	97	
	281			↓	6.415			↓	0.27	2216	122	
118				1.024	.			2.0		.	.	RADIAL TRAVS. ON
119				1.185	.			4.0		.	.	$x/D_{eq} = 2$ AND 4 , RESPECTIVELY
	282				6.685				0.12	2258	215	
	283				6.457				0.25	2356	205	HISTO. MEASURED RADIALY
	284				6.266				0.36	2152	316	ON $x/D_{eq} = 4$
	285				5.935				0.56	1299	429	
	286				5.770			↓	0.65	980	394	
120					.			4.0	.	.	.	REPEAT OF G-119
121					.			4.0	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-50. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/15/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = 3.320$ $V_j = 2476$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 321 $T_T = 1733$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
122		EW		1.345	.	13.677		6.0	.	.	.	RADIAL TRAVS. ON $x/D_{eq} = 6$ AND 8, RESPECTIVELY
123				1.505	.			8.0	.	.	.	
	287			.	6.805				0.05	2184	242	HISTO. MEASURED RADIALY ON $x/D_{eq} = 8$
	288			.	6.472				0.24	2079	299	
	289			.	6.245				0.37	1829	379	
	290			.	5.785				0.57	1193	431	
	291			.	5.446				0.84	826	337	
124		↓		1.665	.			10.0	.	.	.	RADIAL TRAVS. ON $x/D_{eq} = 10$
125		AX		.	6.887			.	0	.	.	
	292			1.665				10.0		1926	358	HISTO. MEASURED AXIALLY ON JET AXIS
	293			1.674				10.0		1928	322	
	294			1.516				8.0		2193	265	
	295			1.353				6.0		2212	181	
	296			1.193				4.0		2148	198	
	297			1.035				2.0		2074	170	AX. TRAVS. ON JET AXIS
126				.				.		.	.
127		↓		

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-50. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 10/15/81

MODEL = 3 $P_r = 3.320$ $V_j = 2476$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 321 $T_T = 1733$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
128		AX	/	-	7.744	13.677	/	-	0.5	.	.	AX TRAVS. ON
129			/	-			/	-		.	.	$r/D_{eq} = 0.5$
	298		/	0.876			/	0.0		2101	275	
	299		/	1.034			/	2.0		1836	321	HISTO. MEASURED
	300		/	1.193			/	4.0		1778	388	AXIALLY ON $r/D_{eq} = 0.5$
	301		/	1.355			/	6.0		1594	432	
	302		/	1.519			/	8.0		1441	405	
	303		/	1.676			/	12.0		1275	394	
130		↓	/	-	7.744	↓	/	-	0.5	.	.	AX. TRAVS. ON $r/D_{eq} = 0.5$
		REF	0.045	0.682	5.669	13.678	EAST EDGE OF CORE EXIT		.	.	.	
131		SLANT AX		NOT RECORDED			.	/		.	.	
132			-		5.556		.	/	SLANT $r'/h = 0.5$	.	.	SLANT AX TRAVS. ON $r'/h = 0.5$
133			-				.	/		.	.	
	304		4.779				13.0	/		2535	132	
	305		4.431				12.0	/		2484	139	HISTO. MEASURED SLANT-AXIALLY
	306	↓	4.034	↓	↓	↓	11.0	↓		2368	116	ON $r'/h = 0.5$

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

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$D_{eq} =$ 5.67 In.

/Sec $h =$ 0.81 In.

TEST POINT = 321 $T_T = 1733^{\circ}R$ $V_{a/c} = 0$ Ft/Sec $h = 0.81$ in

[illegible]

P_r = Pressure Ratio	V_j = Fully Expanded Jet Velocity	D_{eq} = Equivalent Diameter
T_T = Total Temperature	$V_{j/c}$ = Free Jet Velocity	h = Annulus Height

TABLE 5-50. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/15/81

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 3 $P_r = \underline{3.320}$ $V_i = \underline{2476}$ Ft/Sec $D_{eq} = \underline{5.67}$ in.

TEST POINT = 321 $T_T = 1733$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ in.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.045	0.682	5.669	13.678	EAST EDGE OF CORE EXT			.	.	
134		SLANT AX	.		5.664			SLANT $r'/h=1.0$.	.	.	} SLANT AX. TRANS. ON $r'/h=1.0$
135			.						.	.	.
	317		2.927				7.9			2479	161	} HISTO. MEASURED SLANT-AXIALY ON $r'/h=1.0$
	318		2.207				5.9			2316	190	
	319		1.129				2.9			2281	228	
	320		1.256				3.3			2303	286	
	321		0.407				1.0			2325	107	
136					5.772			SLANT $r'/h=1.5$.	.	.	} SLANT AX. TRANS. ON $r'/h=1.5$
137								"	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-51. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/15/81

LASER DOPPLER VELOCIMETER

MODEL = 3 $P_r = 3.239$ $V_j = 1734$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 1313 $T_T = 877$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.045	0.676	5.631	13.678	EAST EDGE OF		LORE EXIT			
138		AX SLANT			5.510		.	.	SLANT $r'/h = 0.5$	.	.	} SLANT AX. TRAUS. ON $r'/h = 0.5$ AND 1.0, RESPECTIVELY
139		↓		↓	"		.	.	↓	.	.	
140					5.631		.	.	$r'/h = 1.0$.	.	
141		↓		↓	"		.	.	↓	.	.	
		REF		0.870	6.845	13.727	PLUG TIP		.	.	.	
142		AX	/	-	↓		/	.	0	.	.	} AX. TRAUS. ON $r'/D_{eq} = 0$ AND 0.5, RESPECTIVELY
143		↓	/	-	↓		/	.	"	.	.	
144			/	-	7.701		/	.	0.5	.	.	
145		↓	/	.	"		/	.	"	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-52. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 10/16/81

MODEL = 3 $P_r = 3.136$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 314 $T_T = 1713$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		0.863	6.895	13.694	PLUG	TIP				
146		AX		.				.	0	.	.	AX. TRAVS. ON JET AXIS
147				.				.		.	.
	322			1.665				10.0		1980	313	HISTO. MEASURED AXIALLY ON JET AXIS
	323			1.505				8.0		2165	221	
	324			1.295				5.4		2213	173	
	325			1.345				6.0		2107	535	
	326			1.085				2.7		2076	168	
	327			1.185				4.0		2189	179	
	328			1.035	↓			2.1	↓	2063	188	AX. TRAVS. ON $V/D_{eq} = 0.5$
148				.	7.751			.	0.5	.	.	
149				HISTO. MEASURED ON $V/D_{eq} = 0.5$
	329			0.864				0		2148	226	
	330			0.904				0.5		1788	283	
	331			1.024				2.0		1873	298	
	332			1.185	↓	↓		4.0	↓	1884	354	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

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TABLE 5-52. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/16/81

LASER DOPPLER VELOCIMETER

(Continued)

MODEL = 3 $P_r = 3.136$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 314 $T_T = 1713$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	333	AX		1.505	7.751	13.694		8.0	0.5	1528	339	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$ (CONTINUED)
	334			1.345				6.0		1705	339	
	335			1.665				10.0		1390	345	
150		EW			-			10.0	-	.	.	RADIAL TRAVS. ON $r/D_{eq} = 8$ AND 10, RESPECTIVELY
151				1.505	-			8.0	-	.	.	
	336				6.815				0.05	2192	224	HISTO. MEASURED RADIALLY ON $r/D_{eq} = 8$
	337				6.489				0.24	2004	301	
	338				6.255				0.37	1795	361	
	339				5.795				0.64	1117	324	
	340				5.456				0.84	772	266	
	341				5.040				1.09	511	150	
	342				3.719				1.86	382	25	
152				1.345	-			6.0	-	.	.	RADIAL TRAVS. ON $r/D_{eq} = 6.0$ AND 4.0, RESPECTIVELY
153				1.185	-			4.0	-	.	.	
	343				5.085				1.06	344	39	HISTO. MEASURED RADIALLY ON $r/D_{eq} = 4.0$
	344				5.760				0.66	811	277	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-52.

AERODYNAMIC TEST RESULTS BY

TEST DATE 10/16/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = \underline{3.136}$ $V_j = \underline{2411}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.TEST POINT = 314 $T_T = \underline{1713}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{0.81}$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	345	EW		1.185	5.945	13.654		4.0	0.56	1189	358	
	346				6.269				0.37	2059	331	HISTO. MEASURED RADIALY
	347				6.481				0.24	2340	180	ON $x'/D_{eq} = 4.0$ (CONTINUED)
	348				6.694				0.12	2250	178	
	349			1.024	3.682			2.0	0.19	381	18	HISTO. MEASURED AT $x'/D_{eq} = 2$ $r/D_{eq} = 1$
154									-	-	-	RADIAL TRANS. ON $x'/D_{eq} = 2.0$
155				0.867				0.0	-	-	-	AND P.O. RESPECTIVELY
	350				3.670				1.89	373	22	
	351				5.391				0.88	274	39	
	352				5.787				0.65	930	286	
	353				5.940				0.56	1741	338	HISTO. MEASURED RADIALY
	354				6.104				0.46	2315	144	ON $x'/D_{eq} = 0.0$
	355				6.228				0.39	2349	99	
	356	V		V	6.422	V		V	0.28	2345	106	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-52. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/16/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = \underline{3.136}$ $V_j = \underline{2411}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.TEST POINT = 314 $T_T = \underline{1713}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{0.81}$ In.ORIGINAL PAGE 19
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos.	Axial Pos.	Radial Pos.	Mean Velocity	Turb. Velocity	Remarks
			Slant Axial	Axial	EW	NS	x'/h	x/D_{eq}	r/D_{eq}	Ft/Sec	Ft/Sec	
		REF	0.044	0.670	5.656	13.297	CETER OF ANNULUS	HEIGHT AT CORB EXT				
156		SLANT AX	-		5.656		-		SLANT $r'/h=0.5$	-	-	SLANT AX. TRAVS.
157												ON $r'/h=0.5$
	357		0.916				2.39			2951	151	
	358		1.338				3.54			2466	96	
	359		1.644				4.38			2157	121	
	360		1.955				5.23			2329	93	
	361		2.300				6.18			2517	136	
	362		2.630				7.08			2573	98	
	363		2.895				7.80			2472	450	
	364		3.105				8.38			2352	169	
	365		3.308				8.93			2161	123	
	366		3.696				10.0			2280	116	
	367		4.037				10.9			2447	100	
	368		4.408				11.9			2527	96	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-52. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/16/81LASER DOPPLER VELOCIMETER (Concluded)MODEL = 3 $P_r = 3.136$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 314 $T_T = 1713$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
158		SLANT AX	-	0.670	5.765	13.297	.		SLANT $r'/h = 1.0$	.	.	SLANT AX. TRANS
159			-				.			.	.	ON $r'/h = 1.0$
	369		2.924				7.87			2481	308	
	370		2.204				5.90			2398	129	HISTO. MEASURED SLANT-
	371		2.960				2.96			2501	163	AXIALLY ON $r'/h = 1.0$
	372		0.980				0.98			2312	164	
160			.		5.895		.		$r'/h = 1.55$.	.	
161			.		"		.		.	.	.	SLANT AX. TRANS.
162			.		5.564		.		$r'/h = 0.43$	.	.	ON $r'/h = 1.55$ AND 0.43 , RESPECTIVELY
163			.				.			.	.
	373		3.319				8.96			2113	194	HISTO. MEASURED SLANT-AXIALLY
	374		2.570				6.91			2535	96	ON $r'/h = 0.43$

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-53. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 10/16/81

MODEL = 3 $P_r = 3.353$ $V_j = 2484$ Ft/Sec $D_{eq} = 5.67$ In.
TEST POINT = 322 $T_T = 1719$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.044		5.658	13.297	MIDPOINT OF ANNULUS HEIGHT AT EXIT					
165		SLANT AX	-					SLANT $r'/h = 0.5$	.	.		} SLANT AX. TRAVS. ON $r'/h = 0.5$
166			-						.	.		
	375		4.911				13.3			2598	107	
	376		4.467				12.1			2529	101	
	377		4.084				11.0			2354	92	
	378		3.653				9.86			2163	112	
	379		3.358				9.05			2479	121	HISTO. MEASURED SLANT-AXIALLY ON $r'/h = 0.5$
	380		3.133				8.44			2626	100	
	381		2.884				7.75			2712	98	
	382		2.800				7.53			2645	98	
	383		2.403				6.45			2525	111	
	384		2.010				5.36			2286	94	
	385		1.691				4.49			2103	313	
	386		1.451				3.83			2555	100	
	387		1.111				2.92			2512	734	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TEST DATE 10/16/81

LASER DOPPLER VELOCIMETER

(Continued)

MODEL = 3 $P_r = \underline{3.353}$ $V_i = \underline{2484}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.

TEST POINT = 322 $T_T = \underline{1719}^{\circ}R$ $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{0.81}$ In.

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NOMENCLATURE

P_r = Pressure Ratio

V_i = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-53. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/20/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = 3.353$ $V_j = 2484$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 322 $T_T = 1719$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		0.860	6.870	13.694	PLUG TIP					
174		AX		-	6.917			.	0	.	.	AX. TRAVS. ON JET AXIS
175				-				.		.	.	
176				-				.		.	.	
177				-				.		.	.	
	393			1.660				10.0		2035	289	HISTO. MEASURED AXIALLY ON JET AXIS
	394			1.500				8.0		2282	272	
	395			1.340				6.0		2413	174	
	396			1.180				4.0		2275	182	
	397			1.019	↓			2.0	↓	1919	171	AX. TRAVS. ON $r/D_{eq} = 0.5$
178				.	7.773			.	0.5	.	.	
179				HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	398			1.660				10.0		1482	330	
	399			1.500				8.0		1567	354	
	400			1.340				6.0		1725	362	
	401	↓		1.180	↓			4.0	↓	2009	342	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

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TABLE 5-53. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/20/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = \underline{3.353}$ $V_j = \underline{2484}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.TEST POINT = 322 $T_T = \underline{1719}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{0.81}$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	402	AX		1.019	7.773	13.694		2.0	0.5	1966	289	HISTO. MEASURED AXIALLY ON $x'/D_{eq} = 0.5$ (CONTINUED)
	403			0.899				0.5		1965	287	
	404		NOT RECORDED					-		-	-	
	405			0.860				0		2295	188	
180			NOT RECORDED					-		-	-	
	406							-		-	-	
181		EW		0.860				0		-	-	RADIAL TRAVS. ON
	407				5.250				0.92	277	73	$x'/D_{eq} = 0$
	408				5.762				0.67	887	311	
	409		NOT RECORDED		5.925				-	-	-	HISTO. MEASURED RADIALLY
	410				5.925				0.58	1646	312	ON $x'/D_{eq} = 0$
	411				6.088				0.48	2314	199	
	412				6.210				0.41	2246	115	
	413				6.378				0.31	2137	143	
	414		NOT RECORDED		6.404							

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-53. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/20/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 3 $P_r = 3.353$ $V_j = 2484$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 322 $T_T = 1719$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
182		EW		1.021	-	13.694		2	-	.	.	RADIAL TRANS. ON $x/D_{eq} = 2$ AND 4, RESPECTIVELY
183				1.182	-			4	-	.	.	
	415				3.823				1.81	384	27	
	416	NOT RECORDED			-				-	-	-	
	417				6.679				0.14	2326	316	HISTO. MEASURED RADIALY ON $x/D_{eq} = 4$
	418				6.465				0.26	2359	425	
	419				6.080				0.49	1720	380	
	420				5.534				0.81	646	215	
	421			↓	4.969			↓	1.14	353	25	
184				1.342	-			6	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 6$, 10 AND 8, RESPECTIVELY
185				1.662	-			10	.	.	.	
186				1.502	-			8	.	.	.	
	422				3.162				2.20	382	84	
	423				6.788				0.08	2206	216	HISTO. MEASURED RADIALY ON $x/D_{eq} = 8$
	424				6.489				0.25	2097	315	
	425			↓	6.265	↓		↓	0.38	-	-	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-53. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER

(Concluded)

TEST DATE 10/20/81

MODEL = 3 $P_r = \underline{3.353}$ $V_j = \underline{2484}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.

TEST POINT = 322 $T_T = 1719$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

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NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

2.

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TEST POINT = 407 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ in.

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V_j = Fully Expanded Jet Velocity

T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

h = Annulus Height

MODEL = 4 $P_r = 3.025$ $V_j = 2392$ Ft/Sec $D_{eq} = 5.67$ In.
TEST POINT = 407 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

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P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

LASER DOPPLER VELOCIMETER

TEST DATE 10/26/81

MODEL = 4 $P_r = \underline{3.069}$ $v_1 = \underline{2405}$ Ft/Sec $D_{eq} = \underline{5.67}$ In.

TEST POINT = 411 $T_T = 1732$ °R $v_{a/c} = 0$ Ft/Sec $h = 0.81$ in.

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NOMENCLATURE

P_r = Pressure Ratio

V_i = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h * Annulus Height

TABLE 5-56. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/22/81

LASER DOPPLER VELOCIMETER

MODEL = 4 $P_r = 3.108$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 413 $T_T = 1723$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		0.858	6.897	13.692	PLATE TIP					
187		AX		.	6.897			.	0	.	.	AX. TRAVS. ON JET AXIS
188				.				.		.	.
	430			1.664				10.1		1826	312	
	431			,				,		-	-	
	432			1.503				8.1		2093	280	HISTO. MEASURED AXIALLY ON JET AXIS
	433			1.342				6.0		-	-	
	434			,				,		2159	440	
	435			1.183				4.1		-	-	
	436			,				,		2069	488	
	437			1.022	✓			2.0	✓	2012	197	
189				.	7.753			.	0.5	.	.	AX. TRAVS. ON $V/D_{eq} = 0.5$
190				.	,			.		.	.	
	438			0.826				.		.	.	
	439				NOT RECORDED. REPEATED			447-	455	.	.	
	440	✓				✓			✓	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-56. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)TEST DATE 10/22/81

MODEL = 4 $P_r = 3.10^8$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.
 TEST POINT = 413 $T_T = 1723$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	441							.	.	.	.
	442							.	.	.	.
	443		NOT RECORDED. (REPEATED 447-455)					.	.	.	.
	444							.	.	.	.
	445							.	.	.	.
	446							.	.	.	.
	447	AX		0.867	7.753	13.692		0.11	0.5	.	.	
	448			0.902				0.55		.	.	
	449			1.022				2.05		.	.	
	450			.				.		.	.
	451			1.183				4.06		.	.	
	452			.				.		.	.
	453			1.343				6.05		.	.	
	454			1.503				8.05		.	.	
	455			1.663				10.05		.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-56. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/22/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 4 $P_r = 3.108$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 413 $T_T = 1723$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
191			/	.	.	.	/	REPEAT OF G-187 AND G-188
192			/	.	.	.	/	.	.	.	.
193			/	.	.	.	/	.	.	.	.
194			/	.	.	.	/	REPEAT OF G-189 AND G-190
195		EW	/	1.673	-	12.692	/	10.2	.	.	.	
	456		NOT RECORDED				/	RADIAL TRANS. ON $x/D_{eq} = 10.2$
196			/	1.575	.		/	8.2	.	.	.	
	457		/		6.813		/		-0.05	2088	266	HISTO. MEASURED RADIALY ON $x/D_{eq} = 8.2$
	458		/		6.491		/		-0.24	1970	295	
	459		/		6.252		/		-0.38	1751	353	
	460		/		5.795		/		-0.65	1196	373	
	461		/	↓	5.461		/	↓	-0.84	878	326	
197			/	1.355	.		/	6.2	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 6.2$ AND 4.2, RESPECTIVELY
	462		NOT RECORDED				/	.	.	.	.
198			/	1.195	.		/	4.2	.	.	.	
		↓	/				/					

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-56. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 10/22/81

MODEL = 4 $P_r = 3.108$ $V_j = 2411$ Ft/Sec $D_{eq} = 5.67$ In.
TEST POINT = 413 $T_T = 1723$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	463	EW		1.195	5.758	13.692		4.2	0.67	968	328	
	464				6.675				0.12	2220	170	HISTO. MEASURED RADIALY ON $x/D_{eq} = 4.2$
	465				6.481				0.24	2292	170	
	466				6.270				0.37	2100	300	
	467			V	6.946			V	0.03	1298	433	
199				1.034	-			2.2	-	-	-	RADIAL TRAVS. ON $x/D_{eq} = 2.2$ AND 0.2, RESPECTIVELY
200				0.877	-			0.2	-	-	-	
	468				6.422				0.28	2201	420	
	469				6.228				0.39	2270	456	
	470				6.425				0.28	2344	82	
	471				-				-	-	-	HISTO. MEASURED RADIALY ON $x/D_{eq} = 0.2$
	472				6.107				0.46	2328	114	
	473				5.940				0.56	1798	329	
	474				↓				-	-	-	
	475				↓				-	-	-	
	476				6.182				0.42	2329	323	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-56. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/22/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 4 $P_r = 3.108$ $V_j = 241$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 413 $T_T = 1723$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.066	0.716	5.740	13.672	MIDDLE POINT OF ANNULUS HEIGHT				AT CORE EXIT	
201		SLANT AX					.	SLANT $r'/h=0.5$	.	.		SLANT-AX. TRAVS
202							.		.	.		ON $r'/h=0.5$
	477		4.546				12.3			2354	263	
	478		4.247				11.4			2304	391	
	479		3.693				9.9			2388	64	HISTO. MEASURED
	480		3.335				8.9			2409	118	SLANT-AXIALLY ON $r'/h=0.5$
	481		2.843				7.6			2424	60	
	482		2.371				6.3			2406	93	
	483		2.041				5.4			2376	62	
	484		1.716				4.5			-	-	
	485		1.426				3.7			2413	65	
	486		1.717				4.5			2373	64	
203			.		5.602		-	$r'/h=1.0$	.	.		SLANT-AX TRAVS.
204			.		.		-	.	.	.		ON $r'/h=1.0$
		↓		↓		↓						

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

(Concluded)

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TEST POINT = 413 $T_T = 1723^{\circ}R$ $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

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NOMENCLATURE

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-57. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/27/81

LASER DOPPLER VELOCIMETER

MODEL = 4 $P_r = 3.122$ $V_j = 2426$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 414 $T_T = 1739$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REP		0.858	6.895	13647	PLUG TIP					
229		AX		-	6.895			.	0	.	.	AX. TRANS. ON JET AXIS
230				-				.		.	.	
	550			1.654				10		1976	409	
	551			↓				↓		-	-	
	552			↓				↓		-	-	
	553			1.498				8		-	-	
	554			↓				↓		2187	184	
	555			1.338				6		2242	130	HISTO. MEASURED AXIALLY
	556			1.258				5		2222	136	ON JET AXIS
	557			1.178				4		2169	130	
	558			1.098				3		2098	147	
	559			1.018				2		1969	170	
	560			↓				↓		2003	154	
	561	↓		0.938	↓	↓		1	↓	1765	196	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-57. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 10/27/81

MODEL = 4 $P_r = 3.122$ $V_j = 2426$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 444 $T_T = 1739$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
231		AX		-	7.751	13.647		.	0.5	.	.	AX. TRAVS. ON $r/D_{eq} = 0.5$
232								.		.	.	
	562			0.866				0.1		2279	130	
	563			0.898				0.5		2053	294	
	564			0.938				1		2025	249	
	565			1.018				2		2057	261	
	566			1.098				3		-	-	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	567			"				"		2028	268	
	568			1.178				4		1980	297	
	569			1.258				5		1870	335	
	570			1.338				6		1770	333	
	571			1.498				8		1568	342	
	572	↓		1.658	↓			10	↓	1440	376	
233		EW		1.658	.			10	-	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 10$ AND 8, RESPECTIVELY.
234		↓		1.498	.	↓		8	-	.	.	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-57. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/27/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 4 $P_r = 3.122$ $V_j = 2426$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 414 $T_T = 1739$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
OF POOR QUALITY

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	573	EW		1.498	3.716	13.647		8	1.86	393	52	
	574				5.034				1.01	480	150	
	575				6.817				0.05	2161	194	HISTO. MEASURED RADIALY ON $x/D_{eq} = 8$
	576				6.490				0.24	2038	245	
	577				6.255				0.37	1769	343	
	578				5.795				0.64	1108	334	
	579			V	5.476			V	0.83	743	218	
235				1.338	-			6	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 4$ AND 6, RESPECTIVELY
236				1.178	-			4	.	.	.	
	580				5.225				1.0	354	40	
	581				5.764				0.66	734	219	
	582				5.945				0.56	1020	306	HISTO. MEASURED RADIALY ON $x/D_{eq} = 4$
	583				6.264				0.37	1992	331	
	584				6.479				0.24	-	-	
	585				"				"	2318	158	
	586	V		V	6.892	V		V	0.12	2271	159	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-57. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/27/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 4 $P_r = 3.122$ $V_j = 2426$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 414 $T_T = 1739$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	587	EW		1.178	6.892	13.647		4	0.0	2161	140	HISTO. MEASURED RADIALY ON $x/D_{eq} = 4$
237				1.018	-			2	-	.	.	RADIAL TRAVS. ON $x/D_{eq} = 2$
238				0.866	-			0.1	-	.	.	AND 0.1, RESPECTIVELY
	588				3.666				1.89	368	114	
	589				5.609				0.75	273	58	
	590				6.419				0.28	2286	73	HISTO. MEASURED RADIALY
	591				6.419				0.28	2285	85	ON $x/D_{eq} = 0.1$
	592				6.294				0.35	2324	125	
	593				5.997				0.53	-	-	
	594			↓	5.997			↓	0.53	1688	317	
239				0.792	-			-0.82	-	-	-	RADIAL TRAVS. ON $x/D_{eq} = -0.82$
	595			↓	3.005			↓	2.28	351	-	HISTO. MEASURED RADIALY
	596	↓		↓	3.005	↓		↓	2.28	389	121	ON $x/D_{eq} = -0.82$

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-57. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 10/28/81

MODEL = 4 $P_r = 3.122$ $V_j = 2426$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 414 $T_T = 1739$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.069		5.631	13.285	CORE EXIT EDGE					
240		NE	0.069		5.528	-	0	-	SLANT $r'/h=0.42$	-	-	CHORDWISE TRANS ON $r'/h=0.42$
241		EW	-		-	13.285	-	-1.68	-	-	-	AT $x'/h=0$ - RADIAL TRANS. ON $x'/h=0$
242		SLANT AX	-		5.631		-	-	SLANT $r'/h=1.0$	-	-	SLANT-AX. TRANS. ON $r'/h=1.0$
	597		2.570				9.58	-		-	-	
	598		"				"	-		2348	82	HISTO. MEASURED
	599		2.980				7.97	-		2350	92	SLANT-AXIALLY ON
	600		2.257				5.99	-		2311	111	$r'/h=1.0$
	601		1.160				2.99	-		2230	147	
	602	↓	0.430		↓		1.00	-	↓	2166	186	
243		EW	0.121		-		-	-1.58	-	-	-	RADIAL TRANS. ON $x'/D_{eq}=-1.6$
244		SLANT AX	-		5.461		-	-	SLANT $r'/h=0.5$	-	-	SLANT-AX. TRANS. ON $r'/h=0.5$
245		SLANT AX	-		"		-	-	"	-	-	
246			-		5.631		-	-	$r'/h=1.0$	-	-	SLANT-AX. TRANS. ON $r'/h=1.0$
	603		3.410		5.461		9.15	-	$r'/h=0.5$	2340	115	HISTO. MEASURED SLANT-AXIALLY
	604	↓	2.850		"	↓	7.61	-	↓	2354	101	ON $r'/h=0.5$

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-57. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Concluded)

TEST DATE 10/28/81

MODEL = 4 $P_r = 3.122$ $V_j = 2426$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 414 $T_T = 1739$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos.	Axial Pos.	Radial Pos.	Mean Velocity	Turb. Velocity	Remarks
			Slant Axial	Axial	EW	NS	x'/h	x/D_{eq}	r/D_{eq}	Ft/Sec	Ft/Sec	
	605	SLANT-AX	2.000		5.461	13.285	5.29		SLANT $r'/h=0.5$	2347	117	HISTO-MEASURED SLANT-AXIALLY ON $r'/h=0.5$ (CONTINUED)
	606		1.650				4.33			-	-	
	607		"				"			2335	112	
	608		1.202				3.10			2337	126	
247			-		5.799		-		$r'/h=1.5$	-	-	SLANT-AX. TRANS. ON $r'/h=1.5, 2.5$ AND 3.0 , RESPECTIVELY
248			-		"		-		"	-	-	
249			-		6.098		-		$r'/h=2.5$	-	-	
250			-		"		-		"	-	-	
251			-		5.959		-		$r'/h=2.0$	-	-	
252		↓	-		"	↓	-		"	-	-	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-59. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER

TEST DATE 10/22/81

MODEL = 4 $P_r = 3.299$ $V_j = 2474$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 421 $T_T = 1738$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos.	Axial Posit.	Radial Posit.	Mean Velocity	Turb. Velocity	Remarks	
			Slant Axial	Axial	EW	NS	x'/h	x/D_{eq}	r/D_{eq}	Ft/Sec	Ft/Sec		
		REF	0.060	0.717	5.482	13.692	MID POINT OF ANNULUS HEIGHT AT CORE EXIT						
211		SLANT AX	-		5.632		-		SLANT $r'/h=1.0$.	.	SLANT-AX TRAVS. ON $r'/h=1.0$	
212			-				-			.	.		
	497		2.982				8.0			2388	72	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=1.0$	
	498		2.257				6.0			2396	105		
	499		1.156				3.0			2347	167		
	500		0.427		V		1.0		V	2200	216		
213			-		5.482		-		$r'/h=0.5$.	.	SLANT-AX TRAVS. ON $r'/h=0.5$	
214			-				-			.	.		
	501		4.407				11.9			2377	78	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=0.5$	
	502		4.032				10.9			2429	75		
	503		3.772				10.2			2469	72		
	504		3.410				9.2			2488	74		
	505		3.132				8.4			2475	121		
	506		2.848				7.6			2454	113		
	507	V	2.609	V	V	V	7.0		V	2440	88		

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-59. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 10/22/82

MODEL = 4 $P_r = 3.299$ $V_j = 2674$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 421 $T_T = 1738$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	508	SLANT AX	2.327	0.717	5.482	13.692	6.21		SLANT $r'/h=0.5$	2418	109	
	509		1.994				5.29			2419	82	HISTO-MEASURED SLANT-AXIALLY ON $r'/h=0.5$ (CONTINUED)
	510		1.649				4.35			2442	100	
	511	↓	1.202	↓	↓	↓	3.13		↓	2463	123	
		RBF		0.826	6.895	13.647	PLUG TIP		.	.	.	
215		AX		-	6.895			.	0	.	.	AX. TRANS. ON JET AXIS
216				-				.		.	.	
	512			NOT RECORDED				.		.	.	
	513			1.626				10		1955	285	
	514			1.466				8		2198	211	
	515			1.306				6		-	-	
	516			1.226				5		2313	148	HISTO-MEASURED AXIALLY ON JET AXIS
	517			1.146				4		2282	169	
	518			-				-		-	-	
	519			1.066				3		2123	161	
	520	↓		0.986	↓	↓		2		1991	179	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-59. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/26/81

LASER DOPPLER VELOCIMETER

(Continued)

MODEL = 4 $P_r = 3.299$ $V_j = 2474$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 421 $T_T = 1738$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x^1/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
217		AX		-	7.752	13.647		-	0.5	.	.	AX. TRAVS. ON $r/D_{eq} = 0.5$
218				-				-		.	.	
	S21			1.626				10		1372	383	
	S22			1.666				8		1451	389	
	S23			1.306				6		1660	402	
	S24			1.226				5		1797	399	
	S25			1.146				4		1857	379	
	S26			1.066				3		-	-	
	S27			NOT RECORDED				-		-	-	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	S28			0.988				2		1832	330	
	S29			0.868				0.5		1925	300	
	S30			0.909				1		-	-	
	S31			NOT RECORDED				-		-	-	
	S32	↓		0.833	↓	↓		0.1	↓	2252	221	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-59. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER

(Continued)

TEST DATE 10/26/81MODEL = 4 $P_r = 3.299$ $V_j = 2474$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 421 $T_T = 1738$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
219		EW		0.833	-	13.647		0.1	-	-	-	RADIAL TRANS. ON $x/D_{eq} = 0.1$
	533				6.422				0.28	2288	135	
	534				6.208				-	-	-	
	535				6.208				0.40	2321	77	HISTO. MEASURED RADIALLY
	536				6.104				0.46	2311	122	ON $x/D_{eq} = 0.1$
	537				5.942				0.56	1779	308	
	538			↓	6.316			↓	0.34	2310	90	
220				0.986	-			2	-	-	-	RADIAL TRANS. ON $x/D_{eq} = 2$
221				1.146	-			4	-	-	-	AND 4, RESPECTIVELY
	539				5.949				0.55	1393	401	
	540				6.268				0.37	2234	268	HISTO. MEASURED RADIALLY
	541				6.481				0.24	2410	164	ON $x/D_{eq} = 4$
	542			↓	6.694			↓	0.12	2284	174	
222				1.306	-			6	-	-	-	RADIAL TRANS. ON $x/D_{eq} = 6$
	543				5.456				0.84	767	312	HISTO. MEASURED RADIALLY
	544	↓		↓	5.793	↓		↓	0.65	-	-	ON $x/D_{eq} = 6$

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

(Concluded)

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TEST POINT = 421 $T_T = 1738$ °R $V_{a/c} = 0$ Ft/Sec $h = 0.81$ in.

[illegible]

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-62*

AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 10/28/81

MODEL = 4 $P_r = 3.329$ $V_j = 2479$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 422 $T_T = 1733$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks	
			Slant Axial	Axial	EW	NS							
		REF	0.065	0.708	5.488	13.285	MID POINT OF ANNULUS HEIGHT AT COKE EXIT						
253		SLANT AX	-		5.488		-	SLANT $r'/h=0.5$		-	-	SLANT-AX. TRAVS ON $r'/h=0.5$	
254			-				-			-	-		
	609		4.407				11.89			2351	87		
	610		4.032				10.86			2365	99		
	611		3.722				10.00			2439	68		
	612		3.410				9.16			2439	82		
	613		2.850				7.62			2424	109	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=0.5$	
	614		2.610				6.97			2397	113		
	615		2.327				6.19			2372	91		
	616		1.996				5.29			2377	118		
	617		1.650				4.34		2395	180			
	618		1.202				3.11		2422	140			
255			-		5.659		-	$r'/h=1.0$	-	-	SLANT-AX. TRAVS. ON $r'/h=1.0$		
256		↓	-	↓	"	↓	-		↓	-		-	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

* THERE ARE NO TABLES NUMBERED 5-60 AND 5-61.

TABLE 5-62. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/28/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 4 $P_r = 3.329$ $V_j = 2479$ Ft/Sec $D_{eq} = 5.67$ In.

TEST POINT = 422 $T_T = 1733$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	619	SLANT AX	2.983	0.708	5.659	13.285	7.99		SLANT $r'/h=1.0$	2363	106	
	620		2.247				5.97			2324	116	
	621		2.257				6.00			2317	118	HISTO. MEASURED SLANT-AXIAL
	622		1.156				2.99			-	-	ON $r'/h=1.0$
	623		"				"			2256	183	
	624		0.427				1.00			1891	263	
257			-		5.805				$r'/h=1.5$	-	-	
258			-		"				"	-	-	SLANT-AX. TRAVERS ON
259			-		5.950				$r'/h=2.0$	-	-	$r'/h=1.5$ AND 2.0, RESPECTIVELY
260			-		-				"	-	-	
		REF	0.065	0.708	5.489	13.285	MID POINT OF ANNULUS HEIGHT AT EXIT					
		REF	-	0.867	6.893	13.285	PLUG TIP					
261		AX		-				-	0			AX. TRAVERS ON JET AXIS
262				-				-				
	625			0.939				-				HISTO. MEASURED AXIAL
	626			1.018				-				ON JET AXIS

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-62. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/28/81

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 4 $P_r = 3.329$ $V_j = 2479$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 422 $T_T = 1733$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.ORIGINAL PAGE 19
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	627	AX		1.018	6.893	13.285		0	1.88	1984	161	
	628			1.098					2.88	2121	144	
	629			1.178					3.88	2218	153	HISTO. MEASURED AXIALLY
	630			1.258					4.88	2265	134	ON JET AXIS (CONTINUED)
	631			1.338					5.88	2293	135	
	632			1.498					7.88	2255	174	
	633			1.658	↓			↓	9.87	2089	249	
263				-	7.749			0.5	-	-	-	AX. TRANS. ON $1/D_{eq} = 0.5$
264				-					-	-	-	
	634			1.658					9.87	-	-	
	635			"					"	1456	336	
	636			1.338					5.88	1665	415	HISTO. MEASURED AXIALLY
	637			"					"	1705	353	ON $1/D_{eq} = 0.5$
	638			1.0					2.88	1888	364	
	639			"					1.88	1852	324	
	640	↓		-	↓	↓		↓	0.90	-	-	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-62. AERODYNAMIC TEST RESULTS BY

TEST DATE 10/28/81

LASER DOPPLER VELOCIMETER

(Concluded)

MODEL = 4 $P_r = 3.329$ $V_j = 2479$ Ft/Sec $D_{eq} = 5.67$ In.TEST POINT = 422 $T_T = 1733$ °R $V_{a/c} = 400$ Ft/Sec $h = 0.81$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
265		EW		0.866	-	13.258		0	-	-	-	RADIAL TRAVS. ON $x'/D_{eq} = 0$
	641			↓	6.078			↓	0.48	2273	170	HISTO. MEASURED RADIALY
	642			↓	6.319			↓	0.37	-	-	ON $x'/D_{eq} = 0$
266				1.178	-			1.8	-	-	-	RADIAL TRAVS. ON $x'/D_{eq} = 1.8$
	643			↓	6.692			↓	0.12	2310	152	HISTO. MEASURED RADIALY
	644			↓	6.481			↓	0.24	2415	140	ON $x'/D_{eq} = 1.8$
	645			↓	6.268			↓	0.37	2275	241	
267				1.498	-			3.7	-	-	-	RADIAL TRAVS. ON $x'/D_{eq} = 3.7$
	646			↓	6.497			↓	0.23	-	-	
	647			↓	"			↓	0.23	2134	228	HISTO. MEASURED RADIALY
	648			↓	6.255			↓	0.37	1966	287	ON $x'/D_{eq} = 3.7$
	649			↓	5.793			↓	0.64	1273	372	
	650	↓		↓	"	↓		↓	0.64	1356	376	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 4/30/82

MODEL = 5 $P_r = \underline{3.123}$ $V_j = \underline{2421}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 513 $T_T = \underline{1732}$ °R $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.19}$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		2.188	7517	13.773	PLUG TIP					
596		AX		.	↓			.	0	.	.	
597				.	↓			.	0	.	.	AX TRANS. ON $r/D_{eq} = 0$ AND 0.5, RESPECTIVELY
598				.	8.276			.	0.5	.	.	
599				.				.		.	.
599B				.				.		.	.
	1377			2.160				-0.39		1699	229	
	1378			2.200				0.16		1688	214	
	1379			2.240				0.73		1659	181	
	1380			2.280				1.29		1607	169	
	1381			2.320				1.86		1576	172	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1382			2.360				2.42		1544	172	
	1383			2.400				2.98		1516	165	
	1384			2.440				3.55		1506	170	
	1385			2.480				4.11		1472	180	
	1386	↓		2.520	↓	↓		4.67	↓	1444	181	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE NO.
OF POOR QUALITY

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1387	AX		2.580	8.276	13.773		5.23	0.5	1410	190	
	1388			2.600				5.80		1266	208	
	1389			2.640				6.36		1336	200	
	1390			2.680				6.92		1273	218	HISTO. MEASURED AXIALLY ON $x'/D_{eq} = 0.5$ (CONTINUED)
	1391			2.720				7.49		1234	222	
	1392			2.760				8.05		1171	237	
	1393			2.800				8.61		1136	234	
	1394	↓		2.840	↓	↓		9.17	↓	1107	221	
		RBF		2.191	7.444	13.761	PLUG TIP (RELOCATED)			.	.	
5976	REPEAT OF 597									.	.	
600	EW			2.191	.			0	.	.	.	
601				.	.			.	.	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 0$ AND 2, RESPECTIVELY
602				2.333	.			2	.	.	.	
603	↓			.	.			.	.	.	.

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE 8
OF POOR QUALITY

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1395	EW		2.333	6.162	13.761		2.0	-0.85	887	263	
	1396				6.358				-0.72	1215	226	
	1397				6.636				-0.53	1548	149	
	1398				6.866				-0.38	1497	142	
	1399				7.162				-0.19	1261	126	
	1400				7.375				-0.05	1163	104	
	1401				7.628				0.12	1314	154	HISTO. MEASURED RADIALY
	1402				7.871				0.28	1517	140	ON $x/D_{eq} = 2.0$
	1403				8.066				0.41	1623	127	
	1404				8.225				0.52	1613	142	
	1405				8.394				0.63	1412	201	
	1406				8.630				0.78	1016	240	
	1407			↓	8.821			↓	0.91	720	194	
604				2.616	.			6.0	.	.	.	} RADIAL TRAVS. ON $x/D_{eq} = 6$
605				"	.			"	.	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 5/3 $T_T = 1732^\circ R$ $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
606		EW		2.758	-	13.761		8	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 8$
607					-			8	.	.	.	
	1408				9.225			8	1.18	607	178	
	1409				8.845				0.92	789	241	
	1410				8.486				0.69	1047	243	
	1411				8.072				0.42	1278	196	
	1412				7.742				0.20	1362	162	
	1413				7.387				-0.04	1359	137	HISTO. MEASURED RADIALY ON $x/D_{eq} = 8$
	1414				7.067				-0.25	1335	147	
	1415				6.732				-0.47	1232	198	
	1416				6.313				-0.75	1010	226	
	1417				5.866				-1.04	750	227	
	1418	↓		↓	5.488	↓		↓	-1.29	566	200	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE IS
OF POOR QUALITY

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.719	2.031	6.186	13.420	MID POINT OF ANNULUS HEIGHT AT EXIT					
608		NS				-	0.14	$r'/h=0.5$	z'/h	.	.	CHORDWISE TRANS. AT ($x'/h=0.14, r'/h$)
	1419					13.301			= 0.03	1808	201	
	1420					13.374			0.24	1725	169	HISTO. MEASURED CHORDWISE AT ($x'/h=0.14, r'/h=0.5$)
	1421					13.467			0.50	1801	200	
	1422					13.483			0.54	1821	219	
609			REPEAT OF G-608				-			.	.	
610		SLANT AX	.			13.420	.	$r'/h=0.5$.	.	.	SLANT-AX. TRANS. ON $r'/h=0.5$
611			.				.		.	.	.
	1423		0.840				0.23			1861	197	HISTO. MEASURED SLANT-AXIAL ON $r'/h=0.5$
	1424		0.942				0.42			1994	245	
	1425		1.035				0.59			2154	271	
	1426		1.102				0.71			2260	244	
	1427		1.164				0.83			2299	248	
	1428		1.213				0.92			2301	221	
	1429		1.310				1.10			2127	157	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 2.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1430	SLANT AX	1.297	2.031	6.186	13.420	1.26		SLANT $r'/h=0.5$	2170	150	
	1431		1.481				1.42			2244	153	
	1432		1.602				1.65			2356	141	
	1433		1.698				1.83			2378	157	
	1434		1.774				1.97			2356	123	
	1435		1.884				2.10			2375	121	HISTO. MEASURED SLANT-
	1436		1.931				2.26			2349	147	AXIALLY ON $r'/h=0.5$
	1437		2.047				2.48			2365	140	(CONTINUED)
	1438		2.163				2.69			2409	130	
	1439		2.288				2.93			2388	189	
	1440		2.389				3.12			2284	251	
	1441		2.480				3.29			2171	321	
	1442	↓	2.608	↓	↓	↓	3.52		↓	2129	351	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.123$ $V_j = 242$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
612		EW	1.310		.	13.289*	1.1	-1.82	.	.	.	
613			"		.		"	"	.	.	.	RADIAL TRANS. ON $x/D_{eq} = -1.82$ AND -1.56 , RESPECTIVELY
614			1.931		.		2.3	-1.56	.	.	.	
615		V	"		.		"	"	.	.	.	
616		NS	1.931		6.186	.		.	SLANT $r'/h = 0.5$	.	.	CHORDWISE TRANS. AT ($r'/h = 0.5$, $x'/h = 2.3$)
617			"			.		.		.	.
	1443		1.931			13.464		$z'/h = 0.35$		2307	175	HISTO. MEASURED CHORDWISE AT ($r'/h = 0.5$, $x'/h = 2.3$)
	1444					13.375		0.24		2316	153	
	1445					13.304		0.04		2316	118	
618			1.310		.	.	1.1	.		.	.	CHORDWISE TRANS. AT ($r'/h = 0.5$, $x'/h = 1.1$)
619						.		.		.	.
	1446					13.469		$z'/h = 0.50$		2077	247	HISTO. MEASURED CHORDWISE AT ($r'/h = 0.5$, $x'/h = 1.1$)
	1447					13.403		0.32		2059	163	
	1448					13.288		0.00		2116	184	
620			2.552		.	.	3.4	.		.	.	CHORDWISE TRANS. AT ($r'/h = 0.5$, $x'/h = 3.4$)
621		V	"		V	.	"	.	V	.	.	

NOMENCLATURE

* NEW REFERENCE OF MID-POINT OF ANNULUS HEIGHT AT EXIT

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

TEST DATE 4/30/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1469	NS	2.552		6.186	13.423	3.4	$2/4 = 0.27$	SLANT $r'/h = 0.5$	2133	328	HISTO MEASURED CHORDWISE
	1450					13.367		0.22		2294	195	AT $(r'/h = 0.5, x'/h = 3.4)$
	1451		↓			13.32	↓	0.06		2239	222	(CONTINUED)
622			3.173			-	4.58					
623			↓			-	↓					
624			3.794			-	5.74					CHORDWISE TRANS. AT $(r'/h = 0.5,$
625			↓			-	↓					$x'/h = 4.58, 5.74, 6.90$
626			4.415			-	6.90					AND 8.05,) RESPECTIVELY
627			↓			-	↓					
628			5.036			-	8.05					
629		↓	↓		↓	-	↓		↓			
630		SLANT AX	-		6.330	13.395	-		$r'/h = 1.0$			SLANT-AX TRANS. ON $r'/h = 1.0$
631			-				-					
	1452		1.108				0.73			2130	266	HISTO. MEASURED SLANT-AXIALLY
	1453		↓				↓			2103	257	ON $r'/h = 1.0$
	1454	↓	1.234		↓	↓	0.96		↓	2207	267	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 4/30/82

MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.
TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1455	SLANT AX	1.323		6.330	13.395	1.26		SLANT $r'/h=1.0$	2169	176	
	1456		1.517				1.49			2183	218	
	1457		1.752				1.93			2367	215	
	1458		1.914				2.23			2215	153	
	1459		2.031				2.45			2232	123	
	1460		2.135				2.64			2286	142	
	1461		2.279				2.91			2369	152	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=1.0$
	1462		2.493				3.31			2241	130	
	1463		2.633				3.57			2291	135	(CONTINUED)
	1464		2.728				3.75			2325	133	
	1465		2.866				4.00			2318	160	
	1466		3.041				4.33			2224	186	
	1467		3.173				4.58			2267	177	
	1468		3.329				4.87			2235	201	
	1469		3.522				5.23			2156	235	
	1470	↓	3.711		↓	↓	5.58		↓	2105	264	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-63. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER

(Concluded)

TEST DATE 4/30/82MODEL = 5 $P_r = 3.123$ $V_j = 2421$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 513 $T_T = 1732$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1471	SLANT AX	3.988		6.330	13.395	6.10	.	SLANT $r'/h = 1.0$	1963	255	HISTO. MEASURED SLANT-AXIALLY ON $r'/h = 1.0$ (CONCLUDED)
	1472	↓	4.281			↓	6.65	.		1844	245	
632		NS	1.234			-	0.96	.		.	.	CHORDWISE TRANS. AT ($r'/h = 1.0$, $x'/h = 0.96$)
633		↓	↓			-	↓	.		.	.	
634	REPEAT OF 6-632		632	633		-	.	.		.	.
635						-	.	.		.	.
	1473	NS	1.234			13.251	.	$z'/h = -0.11$		2274	168	HISTO. MEASURED CHORDWISE AT ($r'/h = 1.0$, $x'/h = 0.96$)
	1474					13.470	.	0.50		2299	189	
	1475					13.435	.	0.41		2261	244	
	1476					13.393	.	0.29		2203	163	
	1477	↓	↓		↓	13.316	.	0.08	↓	2245	173	
636		SLANT AX	-		6.071	.	.	.	$r'/h = 0.2$.	.	SLANT-AX TRANS. ON $r'/h = 0.2$
637		↓	-		↓	.	.	.	↓	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-64. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 5/3/82MODEL = 5 $P_r = \underline{3.209}$ $V_j = \underline{1701}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 1513 $T_T = \underline{850}$ °R $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.19}$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.150	2.188	7.342	13740	PLUG TIP					
638		AX							0			AX. TRAYS. ON $r/D_{eq}=0$ AND 0.5, RESPECTIVELY
639												
640					8.101				0.5			
641												
	1478			2.157				-0.44		1214	144	
	1479			2.197				0.13		1277	148	
	1480			2.237				0.70		1306	118	
	1481			2.277				1.25		1304	103	
	1482			2.317				1.81		1284	107	HISTO. MEASURED AXIALLY ON $r/D_{eq}=0.5$
	1483			2.357				2.38		1271	103	
	1484			2.397				2.94		1249	110	
	1485			2.437				3.50		1226	105	
	1486			2.477				4.07		1206	110	
	1487			2.517				4.63		1179	126	
	1488			2.557				5.19		1161	124	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-64. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 5/3/82

MODEL = 5 $P_r = 3.209$ $V_j = 1701$ Ft/Sec $D_{eq} = 5.03$ In.
TEST POINT = 1513 $T_T = 850$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1489	AX		2.577	8.101	13.740		5.75	0.5	1131	130	
	1490			2.637				6.32		1097	145	
	1491			2.677				6.88		1072	147	
	1492			2.717				7.44		1045	152	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1493			2.757				8.01		1024	148	
	1494			2.793				8.51		982	167	
	1495			2.838				9.13		967	163	
	1496			2.877				9.69		932	161	
	1497	↓		2.917	↓			10.26	↓	921	161	
642		EW		2.186	.			0.3	.	.	.	
643				"	.			"	.	.	.	
644				2.328	.			2	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 0.3$, 2 AND 5.6, RESPECTIVELY
645				"	.			"	.	.	.	
646				26.11	.			5.6	.	.	.	
647		↓		"	.	↓		"	.	.	.	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-64. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/3/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.209$ $V_j = 170$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1513 $T_T = 850$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
648		EW		2.753	.	13.740		7.4	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 7.4$
649					.				.	.	.
	1498				5.808				-1.01	685	185	
	1499				6.222				-0.74	862	169	
	1500				6.642				-0.46	1025	127	
	1501				6.948				-0.26	1068	110	
	1502				7.150				-0.13	1077	104	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 7.4$
	1503				7.348				0.00	1091	104	
	1504				7.729				0.26	1123	111	
	1505				8.129				0.52	1007	152	
	1506				8.459				0.74	847	186	
	1507	NOT RECORDED			-				-	-	-	
	1508			Y	8.878			Y	1.01	628	171	
650				2.895	.			9.2	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 9.2$
651		Y		.	.			.	.	.	.

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-64. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/4/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.209$ $V_j = 1701$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1513 $T_T = 850$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.500	2.002	5.463	13.253	MID-POINT OF ANNULUS HEIGHT AT EXT					
652		SLANT AX	.		5.998			SLANT $r'/h = 0.5$				} SLANT-AX TRAVERS. ON $r'/h = 0.5$
653			.									
	1509		0.950				0.84			1633	232	
	1510		1.050				1.03			1695	194	
	1511		1.120				1.16			1436	109	
	1512		1.550				1.96			1669	90	
	1513		1.900				2.61			1677	57	} HISTO. MEASURED SLANT- AXIALLY ON $r'/h = 0.5$
	1514		2.030				2.85			1704	80	
	1515		2.350				3.45			-	-	
	1516		2.520				3.77			1624	140	
	1517		4.020				6.57			1166	164	
	1518		2.718				4.14			1558	182	
	1519		1.328				1.54			1578	112	
654			.		6.179			$r'/h = 1.0$				} SLANT-AX TRAVERS. ON $r'/h = 1.0$
655			.		.							

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

722

TABLE 5-64. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/4/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.209$ $V_j = 1701$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1513 $T_T = 850$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1520	SLANT AX	0.965		6.179	13.253	0.87		SLANT $r/h=1.0$	1628	114	
	1521		1.252				1.40			-	-	
	1522		"				"			1574	90	
	1523		1.527				1.92			1707	130	
	1524		1.816				2.46			1571	99	
	1525		2.113				3.01			1685	120	
	1526		2.373				3.49			1593	83	
	1527		2.666				4.04			1672	112	
	1528		3.235				5.10			1579	98	HISTO. MEASURED SLANT-AXIAL ON $r/h=1.0$
	1529		"				"			1587	102	
	1530		1.069				1.06			1635	111	
	1531		1.171				1.25			1605	91	
	1532		1.320				1.53			1606	84	
	1533		1.401				1.68			1668	88	
	1534		1.680				2.20			1632	131	
	1535	↓	2.223		↓	↓	3.21		↓	1638	116	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-64. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/4/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 5 $P_r = 3.209$ $V_j = 1701$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1513 $T_T = 850$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1536	SLANT AX	2.485		6.177	13.253	3.70	.	SLANT $r'/h=1.0$	1612	163	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=1.0$ (CONTINUED)
	1537	"	3.454		"		5.59	.	"	1581	93	
656		EW	1.800		-		2.43	-1.53	.	.	.	RADIAL TRAVS. ON $x'/D_{eq} = -1.53$ AND -1.10 , RESPECTIVELY
657			"		-		"	"	-	.	.	
658			2.800		-		4.29	-1.10	-	.	.	
659					-			"	-	.	.	
660					5.978	-		-	$r'/h=0.5$.	.	CHORDWISE TRAVS. AT ($x'/h=4.29$, $r'/h=0.5$), ($x'/h=2.43$, $r'/h=0.5$) AND ($x'/h=1.12$, $r'/h=0.5$), RESPECTIVELY.
661						-		-		.	.	
662			1.800			-	2.43	-		.	.	
663			"			-	"	-		.	.	
664			1.100			-	1.12	-		.	.	
665			"			-	"	-		.	.	AX. TRAVS. ON $r'/D_{eq}=0.92$ (NEAR PLUG SURFACE) TESTED ON 5/5/82
		REF		2.175	7.272	13.737	PLUG TIP	-	.	.	.	
666		AX	.	.	8.688	13.801	-	.	0.92	.	.	
667			.	.	"	"	.	.	"	.	.	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-65. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 5/5/82

MODEL = 5 $P_r = 3.214$ $V_j = 1702$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1514 $T_T = 850$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF		2.181	7.288	13.745	PLUG TIP					
668		AX		-	7.288			-	0			
669				-				-				
670				-	8.047			-	0.5			AX. TRAVS. ON $r/D_{eq}=0$ AND
671				-				-				0.5, RESPECTIVELY
	1538			2.161				-0.28		1237	120	
	1539			2.201				0.28		1308	114	
	1540			2.241				0.84		1358	106	
	1541			2.281				1.41		1353	101	
	1542			2.321				1.97		1350	89	HISTO. MEASURED AXIALLY
	1543			2.361				2.53		1339	90	ON $r/D_{eq}=0.5$
	1544			2.401				3.10		1324	90	
	1545			2.441				3.66		1311	89	
	1546			2.481				4.20		1297	100	
	1547			2.521				4.78		1289	93	
	1548	↓		2.561	↓	↓		5.35	↓	1264	99	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 6-65. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/5/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.214$ $V_j = 1702$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1514 $T_T = 850$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.17$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1549	AX		2.601	8.047	13.745		5.90	0.5	1248	100	
	1550			2.641				6.47		1230	100	
	1551			2.681				7.03		1212	103	
	1552			2.721				7.60		1552	147	HISTO. MEASURED AXIALLY
	1553			2.761				8.16		1161	115	ON $r/D_{eq} = 0.5$
	1554			2.801				8.72		1131	118	
	1555			2.841				9.29		1117	123	
	1556			2.881				9.85		1109	116	
	1557	↓		2.921	↓			10.41	↓	1090	121	
672		EW		2.172	.			-0.12	.	.	.	
673				"	.			"	.	.	.	
674				2.315	.			1.88	.	.	.	RADIAL TRAVS. ON $x/D_{eq} = -0.12$,
675				"	.			"	.	.	.	1.88 AND 5.87, RESPECTIVELY
676				2.598	.			5.87	.	.	.	
677		↓		"	.			"	.	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-65. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/5/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.214$ $V_j = 1702$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1514 $T_T = 850$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
678		EW		2.740	.	13.745		7.86	.	.	.	RADIAL TRANS. ON $x'/D_{eq} = 7.9$
679					.				.	.	.
	1558				5.773				-1.00	1114	144	
	1559				6.080				-0.80	892	168	
	1560				6.327				-0.63	1053	139	
	1561				6.608				-0.45	1140	107	
	1562				6.855				-0.29	1158	98	
	1563				7.237				-0.03	1092	92	HISTO. MEASURED RADIALY ON $x'/D_{eq} = 7.9$
	1564				7.594				0. 0	1156	99	
	1565				7.974				0.45	1195	106	
	1566				8.275				0.65	1059	146	
	1567				8.642				0.89	813	146	
	1568			↓	8.838			↓	1.02	701	125	
680				2.882	.			9.82	.	.	.	RADIAL TRANS. ON $x'/D_{eq} = 9.8$
681		↓		.	.	↓		.	.	.	.

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-65. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/5/82
5/6/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.214$ $V_j = 1702$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1514 $T_T = 850$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.500	1.997	4.557	13.260	MID-POINT OF ANNULUS HEIGHT AT EXIT					
682		SLANT AX	-		6.000	13.326	-		SLANT $r'/h=0.5$.	.	SLANT-AX TRANS. ON $r'/h=0.5$
683			-				-			.	.	
	1569		1.020				0.97			1789	172	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=0.5$
	1570		1.172				1.25			1432	102	
	1571		1.077				1.08			1500	135	
	1572	↓	1.460		↓	↓	1.78		↓	1665	140	
		REF	0.500	1.999	4.585	13.330	MID-POINT OF ANNULUS HEIGHT AT EXIT					
684		SLANT AX	-		5.975		-		SLANT $r'/h=0.5$.	.	REPEAT OF G-682
	1573		1.084				1.09			1452	212	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=0.5$
	1574		1.455				1.78			1670	115	
	1575		1.689				2.22			1670	125	
	1576		1.836				2.49			1615	105	
	1577		1.982				2.76			1657	134	
	1578		1.566				2.00			1677	92	
	1579	↓	2.134		↓	↓	3.05		↓	1642	99	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-65. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/6/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.214$ $V_j = 1702$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1514 $T_T = 850$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
685		SLANT AX	-		6.158	12.330	.		SLANT $r'/h = 1.0$	.	.	SLANT-AX. TRANS. ON $r'/h = 1.0$
686			-				.			.	.	
	1580		1.005				0.94			1637	183	
	1581		1.193				1.29			1586	178	
	1582		1.338				1.56			1587	111	
	1583		1.483				1.83			1631	108	
	1584		1.633				2.11			1643	220	
	1585		1.792				2.41			1554	183	
	1586		1.948				2.70			1564	138	HISTO. MEASURED SLANT-AXIALLY
	1587		2.226				3.22			1635	164	ON $r'/h = 1.0$
	1588		2.534				3.79			1577	137	
	1589		2.357				3.46			1591	121	
	1590		2.758				4.21			1616	102	
	1591		3.343				5.31			1609	80	
	1592		3.908				6.36			1561	161	
	1593		4.414				7.30			1484	110	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-65 AERODYNAMIC TEST RESULTS BY

TEST DATE 5/6/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 5 $P_r = \underline{3.2/4}$ $V_j = \underline{1702}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 1514 $T_T = \underline{850}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{1.19}$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
687		SLANT AX	.	1.339	6.258	13.330			SLANT $r'/h=1.25$			
688			.		.							SLANT-AX TRAVS. ON $r'/h=1.25$,
689			.		6.360				$r'/h=1.5$			1.5 AND 0.3, RESPECTIVELY
690			.		.							
691			.		5.876				$r'/h=0.3$			
692		↓	.		.							
693		EW	5.208		.		8.78	0.08	$r'/h=0$			
694			.		.							
695			4.208		.		6.92	-0.50				
696			.		.							RADIAL TRAVS. ON $x'/D_{eq}=0.08$,
697			3.208		.		5.05	-0.93				-0.5, -0.93 AND -1.35,
698			.		.							RESPECTIVELY
699			2.208		.		3.18	-1.35				(NEAR PLUG SURFACE)
700		↓	.		.							

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 5/7/82
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MODEL = 5 $P_r = 3.128$ $V_j = 2415$ Ft/Sec $D_{eq} = 5.03$ In.
TEST POINT = 514 $T_T = 1722$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.500	2.027	6.025	13.400	MID-POINT	OF ANNULUS HEIGHT AT EXT				
701		SLANT AX	.				.		SLANT $r'/h = 0.5$	.	.	SLANT-AX. TRAVS. ON $r'/h = 0.5$
702			.				.			.	.
	1594		0.756				0.48			1788	316	
	1595		0.817				0.59			1885	228	
	1596		0.967				0.87			2035	364	
	1597		1.215				1.33			1999	242	
	1598		1.315				1.52			2056	243	
	1599		1.415				1.71			2115	235	HISTO. MEASURED SLANT -
	1600		1.512				1.89			2191	237	AXIALLY ON $r'/h = 0.5$
	1601		1.600				2.05			2212	228	
	1602		1.682				2.21			-	-	
	1603		1.786				2.40			2157	218	
	1604		1.887				2.59			2202	216	
	1605		1.988				2.78			2235	241	
	1606		2.109				3.00			2287	201	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66. AERODYNAMIC TEST RESULTS BYTEST DATE 5/7/82LASER DOPPLER VELOCIMETER (Continued)MODEL = 5 $P_r = 3.128$ $V_j = 2415$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 514 $T_T = 1722$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE 11
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Graph No.	Histo No.	Type of Travers	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
703		SLANT AX	-		6.142	13451	.		SLANT $r'/h=1.0$			SLANT-AX. TRAVS. ON $r'/h=1.0$
704			-									
	1607		0.983		6.022		0.90					
	1608		1.522				1.91					
	1609		2.120				3.02					
	1610		2.675		↓		4.06					SOME INACCURACY WAS INVOLVED IN LOCATIONING OF TRAVERSER.
	1611		3.195		5.976		5.03					
	1612		2.909				4.49					REPEATED IN G-705/706, H-1619 through H-1629
	1613		2.357				3.46					
	1614		1.789				2.40					
	1615		1.204				1.31					
	1616		1.032				0.99					
	1617		1.112				1.14					
	1618	↓	1.300		↓	↓	1.49		↓			

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

732

TABLE 5-66. AERODYNAMIC TEST RESULTS BYTEST DATE 5/10/82LASER DOPPLER VELOCIMETER (Continued)MODEL = 5 $P_r = 3.128$ $V_j = 2415$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 514 $T_T = 1722$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.500	2.188	5.952	13.489	MID-POINT OF ANNULUS HEIGHT AT EXT					
705		SLANT AX	.		6.146			SLANT $r'/h = 1.0$	.	.		SLANT-AX. TRAVS. ON $r'/h = 1.0$
706			.						.	.		
	1619		1.398				1.68			2193	292	
	1620		1.581				2.02			2249	358	
	1621		1.701				2.24			-	-	
	1622		1.914				2.64			2185	243	
	1623		1.989				2.78			2195	299	HISTO. MEASURED SLANT-AXIALLY ON $r'/h = 1.0$
	1624		"				"			2192	167	
	1625		2.169				3.11			2241	195	
	1626		2.264				3.25			2172	139	
	1627		2.454				3.65			2190	151	
	1628		1.915				2.64			2159	155	
	1629	✓	1.701		✓		2.24		✓	2112	218	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/10/82LASER DOPPLER VELOCIMETER (Continued)MODEL = 5 $P_r = \underline{3.128}$ $V_j = \underline{2415}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 514 $T_T = \underline{1722}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{1.19}$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
707		SLANT AX	.		6.246	13.499	.		SLANT $r'/h = 1.25$.	.	
708			.		"		.		"	.	.	
709			.		6.346		.		$r'/h = 1.5$	.	.	SLANT-AX TRANS. ON $r'/h = 1.25$, 1.5, AND 0.3, RESPECTIVELY
710			.		"		.		"	.	.	
711			.		5.952		.		$r'/h = 0.3$.	.	
712		↓	.		"		.		"	.	.	
713		EW	5.208		.		8.8	0.0	$r'/h = 0.5$.	.	
714			"		.		"	"		.	.	
715			4.208		.		6.9	-0.5		.	.	RADIAL TRANS. ON $x'/D_{eq} = 0.0$, -0.5, -0.72 AND -1.58, RESPECTIVELY
716			"		.		"	"		.	.	
717			3.208		.		5.1	-0.72		.	.	
718			"		.		"	"		.	.	
719			2.208		.		2.2	-1.58		.	.	
720		↓	"		.		"	"		.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/12/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = \underline{3.128}$ $V_j = \underline{2415}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 514 $T_T = \underline{1722}$ °R $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{1.19}$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.500	2.201	7.355	13.876	PLUG TIP					
721		AX		.	7.355			-	0	.	.	
722				.	'			-	'	.	.	
723				.	8.114			-	0.5	.	.	
724				.				.		.	.
	1630			2.173				-0.39		1550	208	
	1631			2.213				0.17		1763	160	
	1632			2.253				0.73		1798	138	
	1633			2.293				1.29		1794	147	
	1634			2.333				1.86		1776	124	
	1635			2.373				2.42		1754	118	
	1636			2.413				2.98		1735	115	
	1637			2.453				3.54		1713	111	
	1638			2.493				4.11		1707	118	
	1639			2.533				4.67		1687	128	
	1640	↓		2.573	↓	↓		5.23	↓	1654	136	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/12/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 5 $P_r = 3.128$ $V_j = 2415$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 514 $T_T = 1722$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1641	AX		2.613	8.114	13.876		5.80	0.5	1622	133	
	1642			2.653				6.36		1584	152	
	1643			2.693				6.92		1534	152	
	1644			2.733				7.49		1510	154	
	1645			2.773				8.05		1459	169	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1646			2.813				8.61		1405	171	
	1647			2.853				9.17		1382	181	
	1648			2.893				9.74		1350	188	
	1649			2.893				9.74		1334	177	
	1650	↓		2.933	↓			10.29	↓	1289	202	
725		EW		2.201	-			0.0	.	.	.	
726				"	-			"	.	.	.	
727				2.352	-			2.0	.	.	.	RADIAL TRANS. ON $x'/D_{eq} = 0$, 2.0 AND 6.0, RESPECTIVELY
728				"	-			"	.	.	.	
729				2.654	-			6.0	.	.	.	
730		↓		"	.	↓		"	.	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-66. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/12/82

LASER DOPPLER VELOCIMETER

(Concluded)

MODEL = 5 $P_r = 3.128$ $V_j = 2415$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 514 $T_T = 1722$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.19$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
731		EW		2.800	-	13.876		8.0	-	.	.	RADIAL TRANS. ON $x'/D_{eq} = 8.0$
732					-				-	.	.	
	1651				5.517				-1.21	697	192	
	1652				5.991				-0.90	998	217	
	1653				6.498				-0.57	1267	162	
	1654				6.773				-0.38	1343	141	
	1655				7.052				-0.20	1370	130	HISTO. MEASURED RADIALY ON $x'/D_{eq} = 8.0$
	1656				7.355				0.0	1421	121	
	1657				7.674				0.21	1478	134	
	1658				7.825				0.31	1498	138	
	1659				8.040				0.45	1413	168	
	1660				8.343				0.65	1200	204	
	1661				8.668				0.87	928	198	
	1662				9.053				1.12	684	169	
733				2.950	.			12	.	.	.	RADIAL TRANS. ON $x'/D_{eq} = 12$
734				"	.			"	.	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETERTEST DATE 5/19/82MODEL = 6 $P_r = 3.128$ $V_j = 2420$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 613 $T_T = 1728$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.086	2.219	7.214	13.893	PLUG TIP					
737		AX		-	7.214			.	0	.	.	} AX. TRANS. ON $r/D_{eq} = 0$ AND 0.5, RESPECTIVELY
738				-	"			.	"	.	.	
739				-	7.971			.	0.5	.	.	
740				-				.		.	.	
	1667			2.196				-0.39		-	-	
	1668			2.236				0.17		2046	168	
	1669			2.274				0.70		1989	163	
	1670			2.318				1.32		1954	156	
	1671			2.358				1.89		1938	163	} HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1672			2.396				2.42		1924	183	
	1673			2.436				2.98		1898	190	
	1674			2.476				3.55		1859	231	
	1675			2.516				4.11		1844	195	
	1676			2.556				4.67		1809	223	
	1677			2.596				5.23		1757	246	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 5/19/82

MODEL = 6 $P_r = 3.128$ $V_j = 2420$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 613 $T_T = 1728$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1678	AX		2.636	7.771	13.893		5.80	0.5	1690	275	
	1679			2.676				6.36		1632	266	
	1680			2.716				6.92		1583	283	
	1681			2.756				7.49		1546	284	HISTO-MEASURED AXIALLY ON $r/D_{eq} = 0.5$ (CONTINUED)
	1682			2.796				8.05		1471	300	
	1683			2.836				8.61		1465	302	
	1684			2.876				9.17		1404	284	
	1685			2.916				9.74		1364	293	
	1686	V		2.956	V			10.30	V	1345	297	
741		EW		2.219	.			0.0	-	.	.	RADIAL TRAVS. ON $r/D_{eq} = 0$
742		"		"	-			"	-	.	.	
743		AX		-	8.728			-	1.0	.	.	AX. TRAVS. ON $r/D_{eq} = 1.0$
744		"		-	"			-	"	.	.	
745		EW		2.461	-			3.40	-	.	.	RADIAL TRAVS. ON $r/D_{eq} = 3.4$
746		"		"	-			"	-	.	.	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 5/17/82MODEL = 6 $P_r = \underline{3.128}$ $V_j = \underline{2420}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 613 $T_T = \underline{1728}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.27}$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1687	EW		2.461	6.673	13.893		3.4	-0.36	1892	185	
	1688				6.866				-0.23	1966	126	
	1689				7.053				-0.11	1888	143	
	1690				7.246				0.02	1797	122	
	1691				7.389				0.12	1798	149	
	1692				7.547				0.22	1882	158	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 3.4$
	1693				7.742				0.35	1972	122	
	1694				7.906				0.46	1931	185	
	1695				8.113				0.59	-	-	
	1696			↓	8.323			↓	0.73	1163	306	
747				2.675	-			6.4	-	-	-	RADIAL TRAVS. ON $x/D_{eq} = 6.4$
748		↓		,	-	↓		,	-	-	-	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/20/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.128$ $V_j = 2420$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 613 $T_T = 1725$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.087	2.224	7.341	13.841	PLUG TIP					
749		EW		2.833	-			8.60	-	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 8.6$
750					-				-	.	.	
	1698				6.494				-0.56	1299	322	
	1699				6.674				-0.64	1470	298	
	1700				6.880				-0.30	1691	247	
	1701				7.106				-0.16	1775	199	
	1702				7.349				0.00	1820	193	HISTO. MEASURED RADIALLY
	1703				7.520				0.12	1785	233	ON $x'/D_{eq} = 8.6$
	1704				7.690				0.20	1757	209	
	1705				7.853				0.34	1622	268	
	1706				8.076				0.49	1413	285	
	1707				8.244				0.60	1225	312	
751				2.092	-			-1.86	-	.	.	RADIAL TRAVS. ON $x'/D_{eq} = -1.86$
752					-				-	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/20/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.128$ $V_j = 2420$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 613 $T_T = 1728$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
753		EW	.	2.113	-	13.841	.	-1.56	.	.	.	RADIAL TRANS. ON $x'/D_{eq} = -1.56$
754		"	.	"	-	"	.	"	.	.	.	
		REF	0.200	2.060	5.763	13.342	MID-POINT OF ANNULUS HEIGHT AT EXIT					
755		SLANT AX	.				.		SLANT $r'/h = 0.5$	.	.	SLANT-AX. TRANS. ON $r'/h = 0.5$
756			.				.			.	.
	1708		4.687				7.73			2100	160	
	1709		4.598				7.57			2066	186	
	1710		4.314				7.08			2067	192	
	1711		4.007				6.55			2141	193	
	1712		3.694				6.01			2182	188	HISTO. MEASURED SLANT-AXIALLY
	1713		3.393				5.49			2227	180	ON $r'/h = 0.5$
	1714		3.097				4.99			2260	181	
	1715		2.797				4.47			2311	183	
	1716		2.489				3.94			2342	188	
	1717		2.294				3.60			-	-	
	1718	↓	2.095		↓	↓	3.26		↓	2320	135	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 5/20/82

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MODEL = 6 $P_r = \underline{3.128}$ $V_j = \underline{2420}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 613 $T_T = \underline{1728}^{\circ}R$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.29}$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1719	SLANT AX	1.908		5.763	13.342	2.94		SLANT $r'/h=0.5$	2339	110	
	1720		1.701				2.58			2333	117	
	1721		1.511				2.26			2290	115	
	1722		1.310				1.91			2259	145	
	1723		1.102				1.55			2286	197	
	1724		0.903				1.21			2197	189	HISTO. MEASURED SLANT-AXIALLY
	1725		0.693				0.85			2146	193	ON $r'/h=0.5$ (CONTINUED)
	1726		0.485				0.47			2068	254	
	1727		0.290		↓		0.15		↓	1919	232	
757			.		5.962		.		$r'/h=1.0$	.	.	SLANT-AX. TRANS. ON $r'/h=1.0$
758			.				.			.	.
	1728		4.689				7.73			2133	169	
	1729		4.483				7.37			2137	182	
	1730		4.278				7.02			2133	190	HISTO. MEASURED SLANT-AXIALLY
	1731		4.073				6.67			2133	245	ON $r'/h=1.0$
	1732	↓	3.880		↓	↓	6.33		↓	2152	211	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/20/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = \underline{3.128}$ $V_j = \underline{2420}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 613 $T_T = \underline{1728}^{\circ}\text{R}$ $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.29}$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1733	SLANT-AX	3.692		5.962	13.342	6.01		SLANT $r'/h=1.0$	2118	222	
	1734		3.473				5.65			2076	270	HISTO. MEASURED SLANT-AXIALLY ON $r'/h=1.0$ (CONTINUED)
	1735		3.316				5.36			2038	273	
	1736		3.089				4.97			1953	324	
	1737		2.870				4.59			1890	325	
759			-		6.152		-		$r'/h=1.5$.	.	SLANT-AX. TRANS. ON $r'/h=1.5$ AND $r'/h=0.3$, RESPECTIVELY
760			-		"		-		"	.	.	
761			-		5.642		-		$r'/h=0.3$.	.	
762			-		"		-		"	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-67. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/20/82

LASER DOPPLER VELOCIMETER

(Continued)

MODEL = 6 $P_r = \underline{2.128}$ $V_j = \underline{2420}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 613 $T_T = \underline{1728}$ °R $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.29}$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.060	5.763	13.342	MID-POINT OF ANNULUS HEIGHT AT EXIT					
762A		NS	0.655		5.763	.	0.78	SLANT $r'/h=0.5$.	.		
762B			"		.	.	"		.	.	CHORDWISE (NS) TRANS.	
763			1.133		.	.	1.61		.	.	AT ($x'/h=0.78$, $r'/h=0.5$),	
764			"		.	.	"		.	.	($x'/h=1.61$, $r'/h=0.5$),	
765			1.610		.	.	2.43		.	.	($x'/h=2.43$, $r'/h=0.5$),	
766			"		.	.	"		.	.	($x'/h=3.25$, $r'/h=0.5$),	
767			2.088		.	.	3.25		.	.	($x'/h=4.07$, $r'/h=0.5$),	
768			"		.	.	"		.	.	($x'/h=4.91$, $r'/h=0.5$) AND	
769			2.564		.	.	4.07		.	.	($x'/h=5.72$, $r'/h=0.5$),	
770			"		.	.	"		.	.	RESPECTIVELY	
771			3.055		.	.	4.91		.	.		
772		Y	3.525		.	.	5.72			↓	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TEST DATE 5/24/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 6 $P_r = \underline{3.128}$ $V_i = \underline{2420}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 613 $T_T = 1728^{\circ} \text{ } ^{\circ}\text{R}$ $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

[illegible]

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 5/24/82

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OF POOR QUALITY

MODEL = 6 $P_r = \underline{3.125}$ $V_j = \underline{2417}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 614 $T_T = \underline{1729}^{\circ}R$ $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{1.29}$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.205	4.483	13.370	PLUG TIP					
776		SLANT AX	-		6.022		-		SLANT $r'/h = 1.0$			SLANT-AX. TRAVERS. ON $r'/h = 1.0$
777			-				-					
	1738		0.520				0.55			1458	316	
	1739		2.063				3.21			1629	318	
	1740		3.446				5.59			2172	235	
	1741		3.662				5.96			2136	376	
	1742		3.840				6.26			2195	198	
	1743		4.016				6.57			2163	199	
	1744		4.198				6.88			2164	186	HISTO. MEASURED SLANT-AXIALLY ON $r'/h = 1.0$
	1745		4.354				7.15			2136	186	
	1746		4.555				7.49			2149	170	
	1747		4.735				7.80			2156	175	
	1748		4.942				8.16			2114	178	
	1749		1.313				1.93			1290	350	
	1750		2.746				4.38			1959	282	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter

T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/24/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.125$ $V_j = 2419$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
778		SLANT AX	-	-	5.822	13.370	-		SLANT $r'/h = 0.5$	.	.	SLANT-AX. TRANS. ON $r'/h = 0.5$
779			-				-			.	.	
	1751		0.454				0.44			2148	290	
	1752		1.031				1.43			2320	181	
	1753		0.744				0.94			2200	189	
	1754		1.317				1.92			2289	124	
	1755		2.014				3.12			2317	137	HISTO. MEASURED SLANT-AXIALLY
	1756		1.677				2.54			2368	123	ON $r'/h = 0.5$
	1757		2.387				3.76			2329	163	
	1758		2.728				4.35			2289	190	
	1759		3.229				5.21			2183	218	
	1760		3.687		↓		6.00		↓	2105	204	
780			.		5.750		.		$r'/h = 0.3$.	.	
781			.		,		.		,	.	.	SLANT-AX. TRANS. ON $r'/h = 0.3$
782			.		6.122		.		$r'/h = 1.25$	.	.	AND 1.25, RESPECTIVELY
783			.		,	↓	.		,	.	.	

NOMENCLATURE

P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter
 T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY

LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 5/24/82

MODEL = 6 $P_r = \underline{3.25}$ $V_i = \underline{241.9}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 614 $T_T = 1729^{\circ}R$ $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

[illegible]

NOMENCLATURE

P_r = Pressure Ratio

V_i = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BYTEST DATE 5/27/82LASER DOPPLER VELOCIMETER (Continued)MODEL = 6 $P_r = 3.125$ $V_j = 2419$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.213	7.332	13.875	PLUG TIP					
786		AX		-	7.332			-	0	.	.	} AX. TRANS. ON $Y/D_{eq} = 0$ AND 0.5 , RESPECTIVELY
787				-	"			-	"	.	.	
788				-	8.089			-	0.5	.	.	
789				-				.		.	.	
	1761			2.185				-0.39		-	-	
	1762			2.225				0.17		1982	198	
	1763			2.265				0.73		1835	206	
	1764			2.305				1.29		1844	197	
	1765			2.345				1.86		1816	198	} HISTO. MEASURED AXIALLY ON $Y/D_{eq} = 0.5$
	1766			2.385				2.42		1802	216	
	1767			2.425				2.98		1777	215	
	1768			2.465				3.55		1766	221	
	1769			2.505				4.11		1738	231	
	1770			2.545				4.67		1736	233	
	1771			2.585				5.23		1658	254	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/27/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.125$ $V_j = 249$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1772	AX		2.625	8.089	13.875		5.80	0.5	-	-	
	1773			2.665				6.36		1549	273	
	1774			2.705				6.92		-	-	
	1775			2.745				7.49		1464	278	
	1776			2.785				8.05		1415	267	
	1777			2.825				8.61		1389	290	
	1778			2.865				9.17		1362	268	
	1779			2.905				9.74		1343	269	
	1780			2.945				10.30		1331	266	
	1781			2.985				10.86		1289	280	
	1782	↓		2.355	↓	↓		2.00	↓	1743	204	
	1783	NOT RECORDED								-	-	

HISTO. MEASURED AXIALLY
ON $r/D_{eq} = 0.5$ (CONTINUED)

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/27/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.125$ $V_j = 2419$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Pos. x/D_{eq}	Radial Pos. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.213	7.251	13.855	PLUG TIP					
790		AX	/	-	8.109		/	.	0.5	.	.	} AX. TRANS. ON $r/D_{eq} = 0.5$ (REPEAT OF G788/G789)
791			/	-			/	.		.	.	
	1786		/	2.905			/	9.74		1464	266	} HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1787		/	2.705			/	6.92		1664	246	
	1788		/	2.505			/	4.11		1881	342	
	1789	↓	/	2.305			/	1.29	↓	1878	190	
	1790-1791		NOT RECORDED				/	.		.	.	
		REF	0.200	2.213	7.302	13.833	PLUG TIP (NEW REFERENCE)			.		
	1792	AX	/	2.305	8.059		/	1.29	0.5	1923	173	} HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.5$
	1793		/	2.265			/	0.73		1926	177	
	1794		/	2.225			/	0.17		2006	185	
	1795	↓	/	2.185			/	-0.39	↓	2094	199	
792		EW	/	2.213	-		/	0.0	-	.	.	} RADIAL TRANS. ON $r/D_{eq} = 0$
793		,	/	,	-		/	,	-	.	.	
						↓						

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/27/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.125$ $V_j = 2419$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
794		EW		2.355	-	13.833		2.0	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 2.0$
795					-				.	.	.	
	1796				6.270				-0.69	990	254	
	1797				6.473				-0.55	1499	291	
	1798				6.753				-0.36	2036	120	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 2.0$
	1799				7.375				0.05	1679	141	
	1800				7.901				0.40	2022	127	
	1801				8.189				0.59	1578	260	
	1802			↓	8.450			↓	0.76	-	-	
796				2.669	-			6.4	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 6.4$ AND 8.6, RESPECTIVELY
797				"	-			"	.	.	.	
798				2.821	-			8.6	.	.	.	
799					-				.	.	.	
	1803				8.809				0.99	758	198	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 8.6$
	1804				8.484				0.78	1020	239	
	1805	↓		↓	8.152	↓		↓	0.56	1379	273	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TEST DATE 5/27/82

(Continued)

TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

NOMENCLATURE

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-68. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/27/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 6 $P_r = 3.125$ $V_j = 2419$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 614 $T_T = 1729$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.213	7.302	13.833	PLUG TIP					
800		EW	.	3.125	.		.	12.8	.	.	.	RADIAL TRANS. ON $x/D_{eq} = 12.8$
801			.	3.125	.		.	12.8	.	.	.	
802			1.397	.	.		2.06	-1.50	SLANT $r/h = 0.5$.	.	
803			,	.	.		,	,		.	.	
804			2.425	.	.		3.82	-1.05		.	.	
805			,	.	.		,	,		.	.	
806			3.01	.	.		4.84	-0.81		.	.	RADIAL TRANS. ON $x/D_{eq} = -1.5,$
807			,	.	.		,	,		.	.	-1.05, -0.81, AND 0.46,
808			3.84	.	.		6.26	0.46		.	.	RESPECTIVELY
809		↓	,	.	.		,	,		.	.	(ONLY MEAN PLUG SURFACE)

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-69. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 5/28/82

MODEL = 6 $P_r = 3.216$ $V_j = 1704$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1613 $T_T = 852$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

756

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.188	7.284	13.725	PLUG TIP					
810		AX		-	7.284			.	0	.	.	AX. TRANS. ON $x/D_{eq} = 0$ AND 0.5, RESPECTIVELY
811				-	"			.	"	.	.	
812				-	8.041			.	0.5	.	.	
813				-				.		.	.	
	1813			2.160				-0.39		1580	117	
	1814			2.200				0.17		1505	107	
	1815			2.240				0.73		1427	151	
	1816			2.280				1.29		1450	104	
	1817			2.320				1.86		1446	111	HISTO. MEASURED AXIALLY ON $x/D_{eq} = 0.5$
	1818			2.360				2.42		1431	107	
	1819			2.400				2.98		1409	114	
	1820			2.440				3.55		1413	110	
	1821			2.480				4.11		1404	126	
	1822			2.520				4.67		1383	127	
	1823			2.560				5.23		1352	146	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-69. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/28/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.216$ $V_j = 1704$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1613 $T_T = 852$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1824	AX		2.600	8.041	13.725		5.80	0.5	1334	148	
	1825			2.640				6.36		1303	154	
	1826			2.680				6.92		1280	166	
	1827			2.720				7.49		1263	180	
	1828			2.760				8.05		1203	184	HISTO-MEASURED AXIALLY ON $x/D_{eq} = 0.5$ (CONTINUED)
	1829			2.800				8.61		1173	198	
	1830			2.840				9.17		1154	201	
	1831			2.880				9.74		1134	196	
	1832	↓		2.920	↓			10.30	↓	1103	197	
814		EW		2.184	.			0.0	.	.	.	
815				"	.			"	.	.	.	RADIAL TRAVS. ON $x/D_{eq} = 0$ AND 2.0, RESPECTIVELY
816				2.326	.			2.0	.	.	.	
817				↓	.			↓	.	.	.	
	183				8.177				0.59	1209	175	HISTO-MEASURED RADIALLY ON $x/D_{eq} = 2.0$
	1835			↓	7.914			↓	0.42	1509	101	
	1835	↓		↓	7.679	↓		↓	0.26	1475	78	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-69. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 5/28/82

MODEL = 6 $P_r = 3.216$ $V_j = 1704$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1613 $T_T = 852$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1836	EW		2.326	7.302	13.725		2.0	0.01	1349	119	
	1837				7.073				-0.14	1464	102	HISTO. MEASURED RADIALY ON $X/D_{eq} = 2.0$ (CONTINUED)
	1838				6.854				-0.28	1524	79	
	1839				6.485			↓	-0.53	1288	170	
818				2.640	.			6.4	.	.	.	
819				'	.			'	.	.	.	RADIAL TRANS. ON $X/D_{eq} = 6.4$ AND 8.6, RESPECTIVELY
820				2.792	.			8.6	.	.	.	
821					.				.	.	.
	1840				6.355				-0.61	984	215	
	1841				6.609				-0.45	1156	190	
	1842				6.860				-0.28	1293	159	
	1843				7.099				-0.12	1367	116	HISTO. MEASURED RADIALY ON $X/D_{eq} = 8.6$
	1844				7.307				0.02	1393	102	
	1845				7.505				0.15	1378	113	
	1846				7.703				0.28	1356	132	
	1847	↓		↓	7.933	↓		↓	0.43	1269	174	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-69. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/28/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = \underline{3.216}$ $V_j = \underline{1704}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 1613 $T_T = \underline{852}$ °R $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.29}$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1848	EW	/	2.792	8.144	13.725	.	8.6	0.57	1110	198	HISTO-MEASURED RADIALY ON $x'/D_{eq} = 8.6$
	1849				8.330		.		0.69	986	226	
	1850			↓	8.514		.	↓	0.81	854	214	
822				3.096	.		.	12.8	.	.	.	
823		↓		"	.	↓	.	"	.	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 12.8$
		REF	0.200	2.038	5.856	13.725	MID POINT OF ANNULUS HEIGHT AT EXT					.
824		EW	1.579	.	.		2.37	-1.53	SLANT $x'/h = 0.5$.	.	
825			"	.	.		"	"		.	.	
826			2.425	.	.		3.83	-1.06		.	.	RADIAL TRAVS. ON $x'/D_{eq} = -1.53, -1.06, -0.72$ AND -0.52 , RESPECTIVELY
827			"	.	.		"	"		.	.	
828			3.210	.	.		5.18	-0.72		.	.	
829			"	.	.		"	"		.	.	
830			4.040	.	.		6.01	-0.52		.	.	
831		↓	"	.	.	↓	"	"	↓	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-69. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/28/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.216$ $V_j = 1704$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1613 $T_T = 852$ °R $V_{a/c} = 0$ Ft/Sec $h = 1.29$ In.ORIGINAL PAGE IS
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
832		SLANT AX	-		5.856	13.255	.		SLANT $r'/h = 0.5$	.	.	SLANT-AX. TRAVS.
833			-				.			.	.	ON $r'/h = 0.5$
	1851		4.760				7.85			1530	104	
	1852		4.189				6.86			1562	117	
	1853		3.655				5.95			1599	131	
	1854		3.109				5.00			1632	103	
	1855		2.539				4.03			1663	95	HISTO. MEASURED SLANT-AXIALLY
	1856		2.138				3.34			1637	121	ON $r'/h = 0.5$
	1857		1.725				2.62			1681	129	
	1858		1.367				2.01			1629	101	
	1859		1.064				1.49			1675	117	
	1860		0.622		↓		0.73		↓	1670	124	
834			.		6.047		.		$r'/h = 1.0$	.	.	SLANT-AX. TRAVS. ON $r'/h = 1.0$
835			.				.			.	.
	1861		0.343				0.25			1543	114	HISTO. MEASURED SLANT-AXIALLY
	1862		2.759		↓	↓	4.40		↓	1523	166	ON $r'/h = 1.0$

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-69. AERODYNAMIC TEST RESULTS BY

TEST DATE 5/28/82

LASER DOPPLER VELOCIMETER (Concluded)

MODEL = 6 $P_r = \underline{3.216}$ $V_j = \underline{1704}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.TEST POINT = 1613 $T_T = \underline{852}$ °R $V_{a/c} = \underline{0}$ Ft/Sec $h = \underline{1.29}$ In.ORIGINAL PAGE 19
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos.	Axial Pos.	Radial Pos.	Mean Velocity	Turb. Velocity	Remarks
			Slant Axial	Axial	EW	NS	x'/h	x/D_{eq}	r/D_{eq}	Ft/Sec	Ft/Sec	
	1863	SLANT AX	3.164		6.047	13.255	5.10		SLANT $r'/h=1.0$	1569	138	
	1864		3.519				5.71			1591	123	
	1865		3.908				6.38			1627	101	
	1866		4.233				6.94			1593	110	HISTO. MEASURED SLANT-AXIALLY
	1867		4.478				7.36			1559	122	ON $r'/h=1.0$
	1868		4.797				7.91			1434	111	
	1869		4.890				8.07			1601	109	
	1870		5.095		↓		8.42		↓	1522	131	
836			.		6.147		.		$r'/h=1.25$.	.	
837			.		"		.		"	.	.	
838			.		6.245		.		$r'/h=1.5$	.	.	SLANT-AX. TRANS. ON $r'/h=1.25$,
839			.		"		.		"	.	.	1.5 AND 0.84, RESPECTIVELY
840			.		5.989		.		$r'/h=0.84$.	.	
841		↓	.		"		.		"	.	.	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-70. AERODYNAMIC TEST RESULTS BY
LASER DOPPLER VELOCIMETER

TEST DATE 6/3/82

MODEL = 6 $P_r = \underline{3.215}$ $V_j = \underline{1706}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 1614 $T_T = \underline{853}^{\circ}\text{R}$ $V_{a/c} = \underline{400}$ Ft/Sec $h = \underline{1.29}$ In.

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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
		REF	0.200	2.183	7.383	13.727	PLUG TIP			.	.	
842		AX		-	7.383			.	.0	.	.	AX. TRAVS. ON $r/D_{eq} = 0$ AND 0.48, RESPECTIVELY
843				-	'			.	'	.	.	
844				-	8.065			.	0.48	.	.	
845				.				.		.	.
	1871			2.155				-0.40		1575	91	
	1872			2.195				0.16		1571	116	
	1873			2.235				0.73		1436	113	
	1874			2.275				1.29		1466	98	
	1875			2.315				1.85		1462	92	HISTO. MEASURED AXIALLY ON $r/D_{eq} = 0.48$
	1876			2.355				2.42		1421	102	
	1877			2.395				2.98		1445	85	
	1878			2.435				3.54		1436	86	
	1879			2.475				4.10		1389	126	
	1880			2.515				4.67		1409	101	
	1881			2.555				5.23		1402	100	

NOMENCLATURE

P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$V_{a/c}$ = Free Jet Velocity

h = Annulus Height

TABLE 5-70. AERODYNAMIC TEST RESULTS BY

TEST DATE 6/3/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.215$ $V_j = 1706$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1614 $T_T = 853$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1882	AX		2.595	8.065	13.727		5.79	0.48	1382	111	
	1883			2.635				6.36		1345	125	
	1884			2.675				6.92		1314	127	
	1885			2.715				7.48		1291	142	HISTO. MEASURED AXIALLY
	1886			2.755				8.04		1279	143	ON $x'/D_{eq} = 0.48$
	1887			2.795				8.61		1243	154	
	1888			2.835				9.17		1220	151	
	1889			2.875				9.73		1212	155	
	1890	↓		2.915	↓			10.29	↓	1186	172	
846		EW		2.182	.			0	-	.	.	
847				"	.			"	-	.	.	RADIAL TRAVS. ON $x'/D_{eq} = 0$
848				2.324	.			1.98	-	.	.	AND 1.98, RESPECTIVELY
849				↓	.			↓	-	.	.	
	1891			↓	6.398			↓	-0.60	1130	159	HISTO. MEASURED RADIALLY
	1892			↓	6.760			↓	-0.36	1523	75	ON $x'/D_{eq} = 1.98$
	1893	↓		↓	7.080	↓		↓	-0.15	1457	99	

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

TABLE 5-70. AERODYNAMIC TEST RESULTS BY

TEST DATE 6/3/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.215$ $V_j = 1706$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1614 $T_T = 853$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.ORIGINAL PAGE 13
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Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1894	EW		2.324	7.346	13.727		1.98	0.03	1326	89	
	1895				7.738				0.28	1452	74	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 1.98$ (CONTINUED)
	1896				8.008				0.46	1498	79	
	1897				8.373				0.68	845	172	
	1898			↓	NOT RECORDED			↓	.	.	.	
850				2.638	-			6.4	.	.	.	RADIAL TRAVE. ON $x/D_{eq} = 6.4$ AND 8.5, RESPECTIVELY
851				"	-			"	.	.	.	
852				2.790	-			8.5	.	.	.	
853					-				.	.	.	
	1899				6.373				-0.61	1083	183	
	1900				7.300				0.02	-	-	
	1901				7.300				0.02	1383	80	HISTO. MEASURED RADIALLY ON $x/D_{eq} = 8.5$
	1902				8.165				0.57	1160	176	
	1903				8.389				0.72	974	186	
	1904				6.020				-0.85	884	181	
	1905	↓		↓	6.624	↓		↓	-0.45	1278	148	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

LASER DOPPLER VELOCIMETER (Continued)

TEST DATE 6/3/82

MODEL = 6 $P_r = \underline{3.215}$ $V_i = \underline{1706}$ Ft/Sec $D_{eq} = \underline{5.03}$ In.

TEST POINT = 1614 $T_T = 853$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ in.

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NOMENCLATURE

P_r = Pressure Ratio

T_T = Total Temperature

V_j = Fully Expanded Jet Velocity

 $V_{a/c}$ = Free Jet Velocity

D_{eq} = Equivalent Diameter

h = Annulus Height

TABLE 5-70. AERODYNAMIC TEST RESULTS BY

TEST DATE 6/3/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.215$ $V_j = 1706$ Ft/Sec $D_{eq} = 5.03$ In.TEST POINT = 1614 $T_T = 853$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
866		SLANT AX	-		5.732	13.212	.		SLANT $r'/h = 0.2$.	.	
867			-		"		.		"	.	.	SLANT-AX. TRAVS. ON $r'/h = 0.2$ AND 1.0, RESPECTIVELY
868			-		6.043		.		$r'/h = 1.0$.	.	
869			-				.			.	.	
	1912		4.855				8.01			1593	119	
	1913		4.864				7.51			1528	115	
	1914		4.294				7.05			1584	120	
	1915		4.078				6.67			1604	114	
	1916		3.862				6.30			1636	101	HISTO. MEASURED SLANT-AXIALLY ON $r'/h = 1.0$
	1917		3.668				5.97			1617	120	
	1918		3.469				5.63			1625	106	
	1919		3.272				5.29			1621	92	
	1920		3.065				4.93			1640	102	
	1921		2.865				4.59			1629	165	
	1922		2.672				4.25			1604	99	
	1923		2.464				3.90			1601	98	

NOMENCLATURE

 P_r = Pressure Ratio V_j = Fully Expanded Jet Velocity D_{eq} = Equivalent Diameter T_T = Total Temperature $V_{a/c}$ = Free Jet Velocity h = Annulus Height

TABLE 5-70. AERODYNAMIC TEST RESULTS BY

TEST DATE 6/3/82

LASER DOPPLER VELOCIMETER (Continued)

MODEL = 6 $P_r = 3.215$ $V_j = 1706$ Ft/Sec $D_{eq} = 5.03$ In.

TEST POINT = 1614 $T_T = 853$ °R $V_{a/c} = 400$ Ft/Sec $h = 1.29$ In.

Graph No.	Histo No.	Type of Traverse	Position (Volts)				Slant Ax. Pos. x'/h	Axial Posit. x/D_{eq}	Radial Posit. r/D_{eq}	Mean Velocity Ft/Sec	Turb. Velocity Ft/Sec	Remarks
			Slant Axial	Axial	EW	NS						
	1924	SLANT-AX	2.276		6.043	13.212	3.57		SLANT $r'/h=1.0$	1528	127	
	1925		2.091				3.25			1518	140	
	1926		1.893				2.91			1483	176	
	1927		1.663				2.52			1466	169	
	1928		1.478				2.20			1299	214	HISTO. MEASURED SLANT-AXIALLY
	1929		1.272				1.84			1416	201	ON $r'/h=1.0$
	1930		1.083				1.52			1441	182	
	1931		0.868				1.15			1347	218	
	1932		0.253				0.09			1502	71	
	1933		0.477				0.48			1640	67	
	1934		0.679				0.82			1560	178	
870			-		5.849		-		$r'/h=0.5$	-	-	SLANT-AX. TRANS. ON $r'/h=0.5$
871			-				-			-	-	
	1935		4.356				7.15			1432	116	
	1936		3.499				5.68			1526	125	HISTO. MEASURED SLANT-AXIALLY
	1937		2.997				4.81			1600	96	ON $r'/h=0.5$

NOMENCLATURE

 P_r = Pressure Ratio

 V_j = Fully Expanded Jet Velocity

 D_{eq} = Equivalent Diameter

 T_T = Total Temperature

 $V_{a/c}$ = Free Jet Velocity

 h = Annulus Height

(Concluded)

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TEST POINT = 1614 $T_T = \underline{853}^{\circ}\text{R}$ $V_{2/c} = \underline{400}$ Ft/Sec $h = \underline{1.29}$ In.

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P_r = Pressure Ratio

V_j = Fully Expanded Jet Velocity

D_{eq} = Equivalent Diameter

T_T = Total Temperature

$$V_{a/c} = \text{Free Jet Velocity}$$

h = Annulus Height

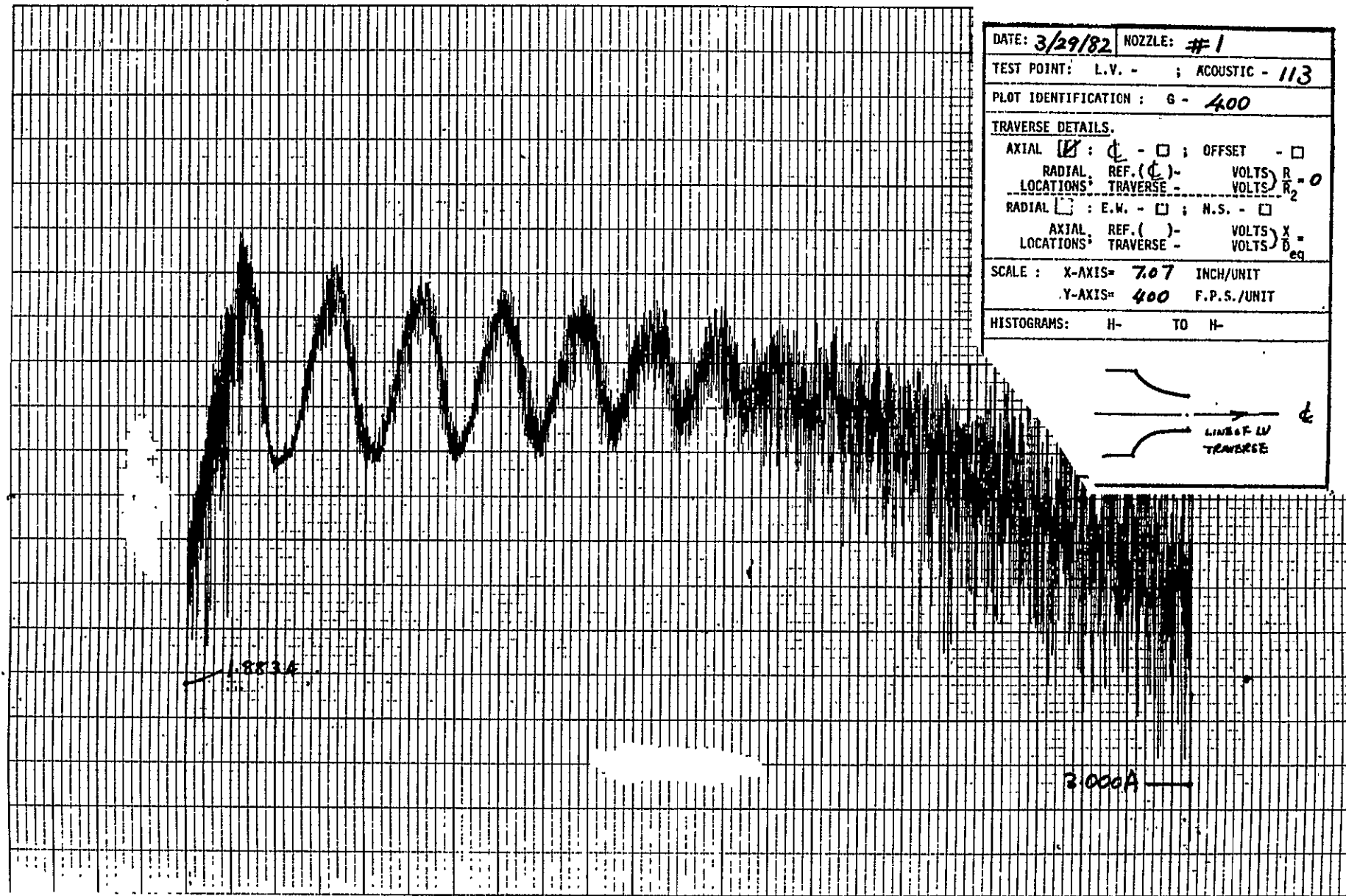
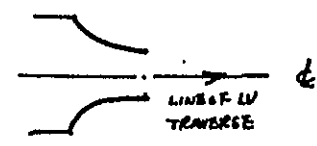
5.2.3 Laser Velocimeter Data of Model 1

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Model 1
Test Point 113

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DATE: 3/29/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 113
PLOT IDENTIFICATION: 6 - 400	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



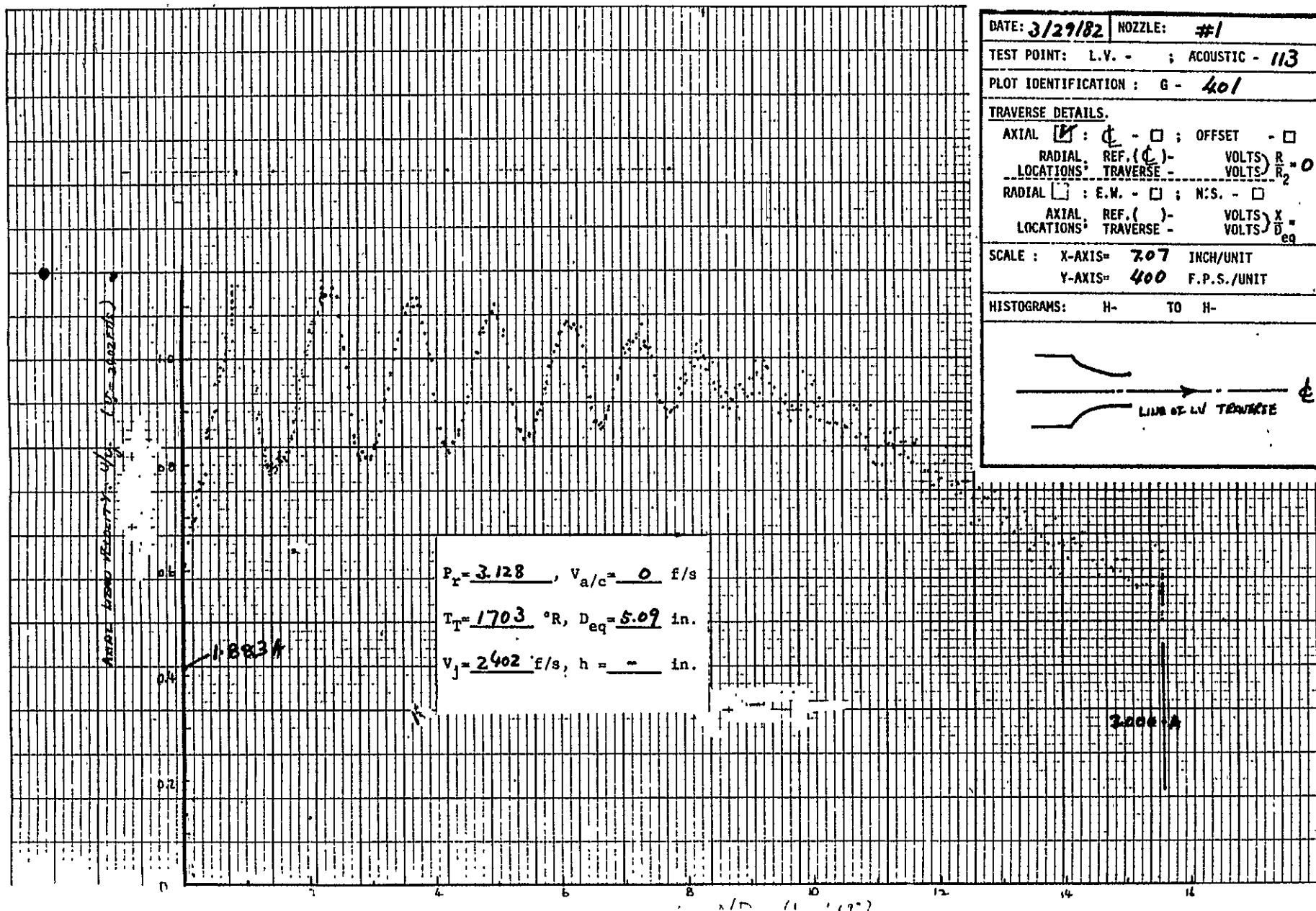
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773
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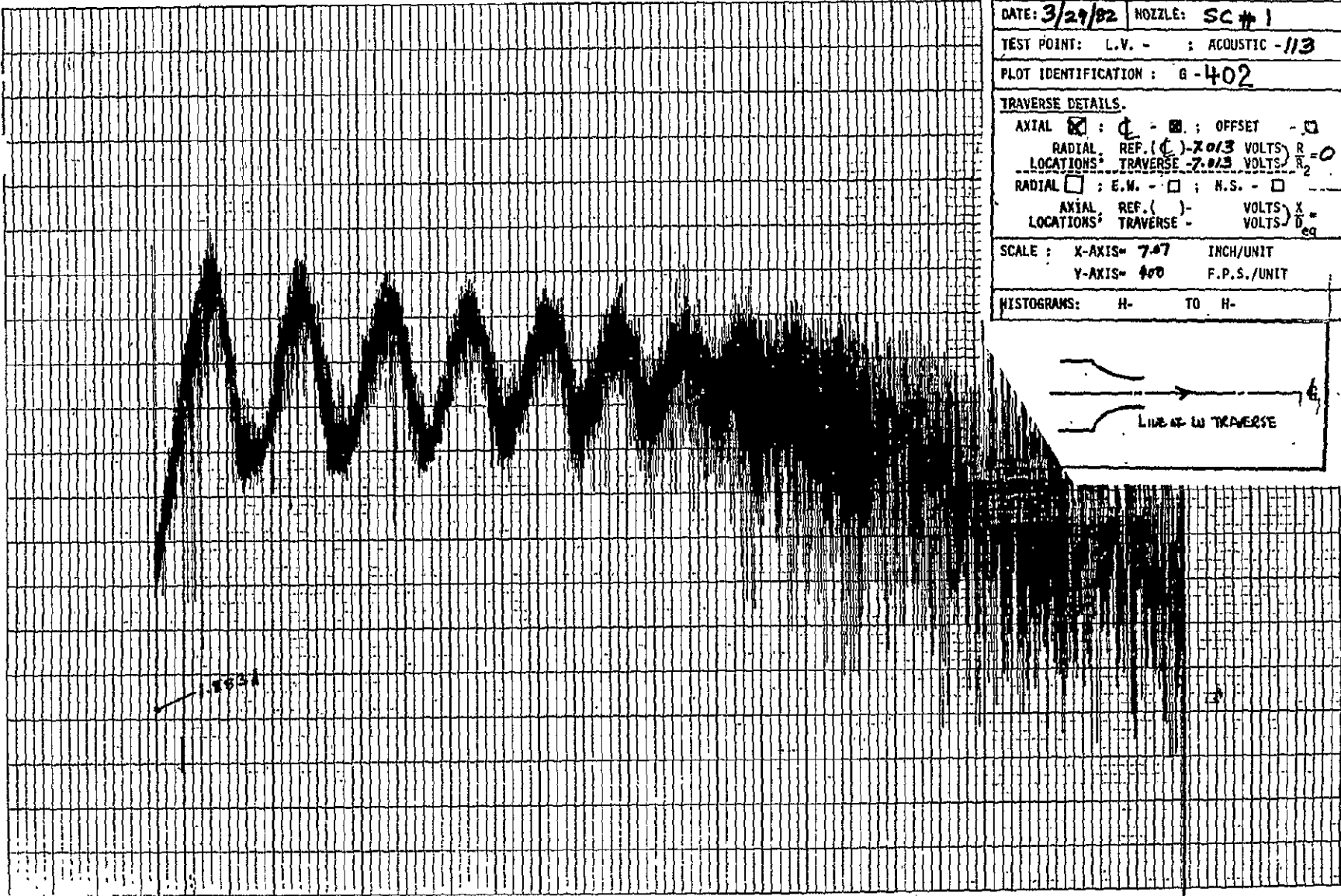
774



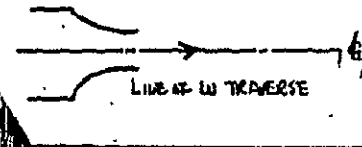
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BUFFALO, NEW YORK
MADE IN U.S.A.

775



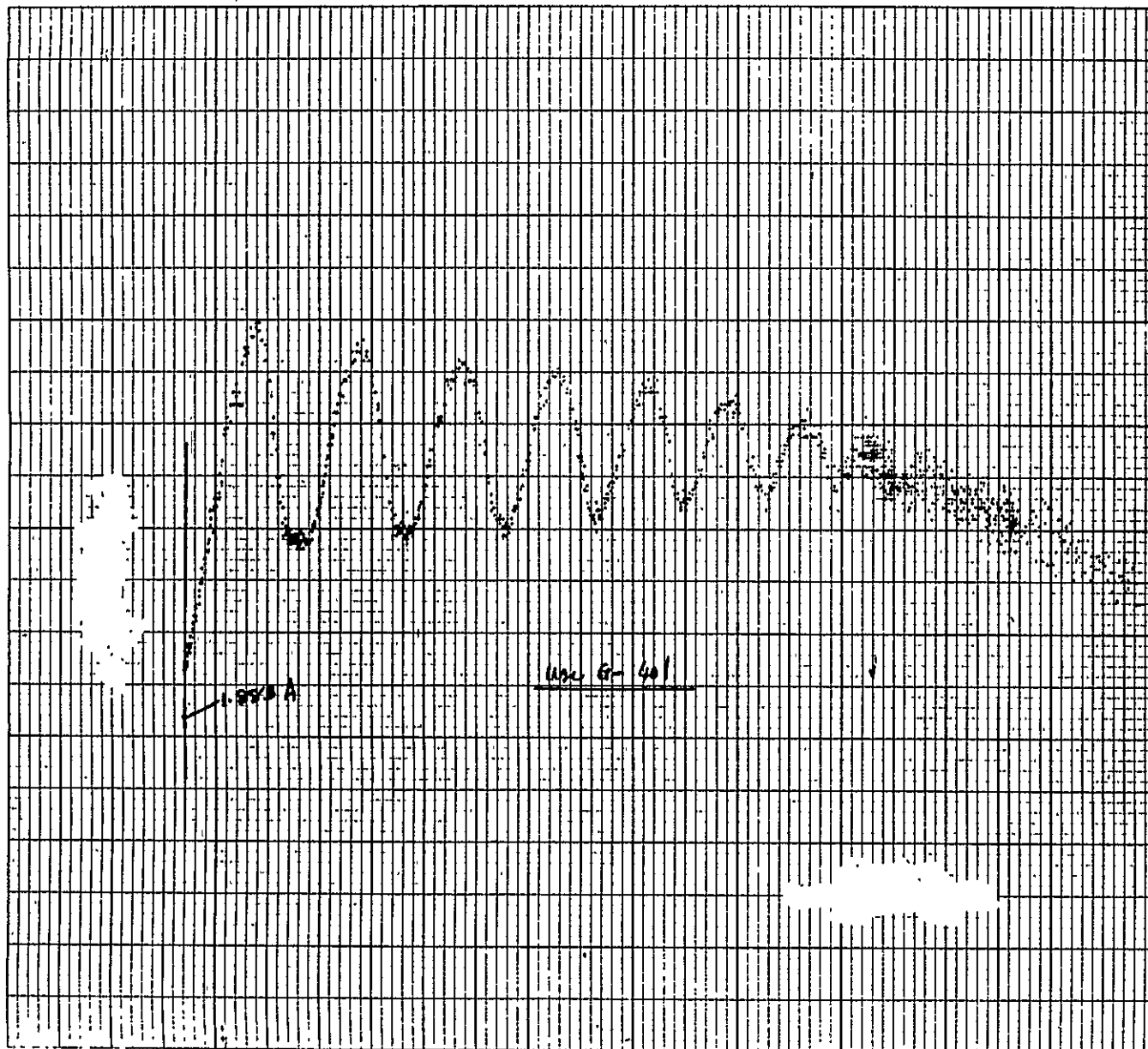
DATE: 3/27/82	NOZZLE: SC #1
TEST POINT: L.V. -	ACOUSTIC -113
PLOT IDENTIFICATION: G-402	
TRAVERSE DETAILS	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) - 7.013 VOLTS	$\frac{R}{R_2} = 0$
LOCATIONS: TRAVERSE - 7.013 VOLTS	
RADIAL <input type="checkbox"/> : E.W. - \square ; N.S. - \square	
AXIAL REF. () - VOLTS	$\frac{X}{D} =$
LOCATIONS: TRAVERSE - VOLTS	$\frac{D}{eq}$
SCALE : X-AXIS= 7.47	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H-	TO H-



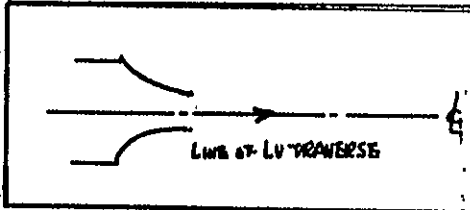
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776
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 DENVER, COLORADO 80202

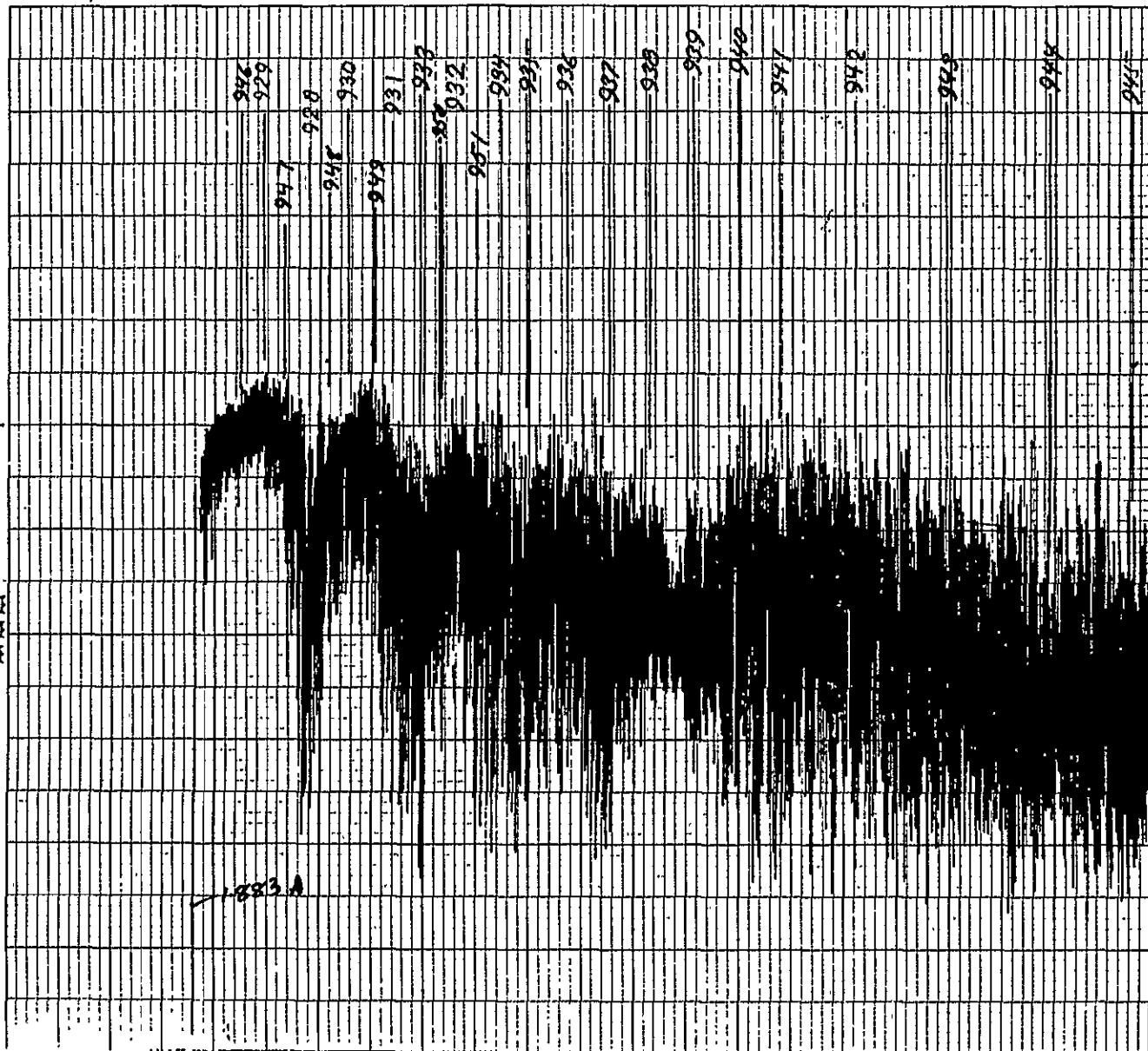


DATE: 3/29/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 113	
PLOT IDENTIFICATION: G - 403	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - 7.013 VOLTS	R ₂ = 0
LOCATIONS TRAVERSE - 7.013 VOLTS	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS	X =
LOCATIONS TRAVERSE - VOLTS	D _{eq} =
SCALE : X-AXIS = 7.07 INCH/UNIT	
Y-AXIS = 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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DATE: 3/29/82	NOZZLE: # 1
TEST POINT: L.V. -	ACOUSTIC - 113
PLOT IDENTIFICATION: G-404	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - 00	
RADIAL REF. (ϕ) - 3013 VOLTS \times R	
LOCATIONS: TRAVERSE - 7.781 VOLTS \times R ₂ - 1.00	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS \times	
LOCATIONS: TRAVERSE - VOLTS \times $\bar{0}_{eq}$	
SCALE :	X-AXIS= 7.07 INCH/UNIT
	Y-AXIS= 400 F.P.S./UNIT
HISTOGRAMS: H-928 TO H-951	

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778

AXIAL HEAD BEARING $\mu\text{in.}$ ($\mu\text{in.} = 10^{-2} \text{ in.}$) $P_r = 3.128$, $V_{a/c} = 0$ f/s $T_T = 1703$ °R, $D_{eq} = 5.09$ in. $V_j = 2402$ f/s, $h = -$ in.AXIAL DISTANCE $\cdot X/D$ ($D = 5.09$)

DATE: 3/29/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 113

PLOT IDENTIFICATION: G-405

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ϕ

RADIAL REF. (ϕ) 7.013 VOLTS R_1

LOCATIONS TRAVERSE 7.787 VOLTS R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

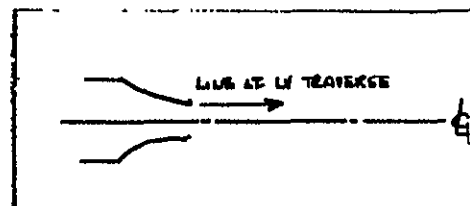
AXIAL REF. () - VOLTS X

LOCATIONS TRAVERSE - VOLTS D_{eq}

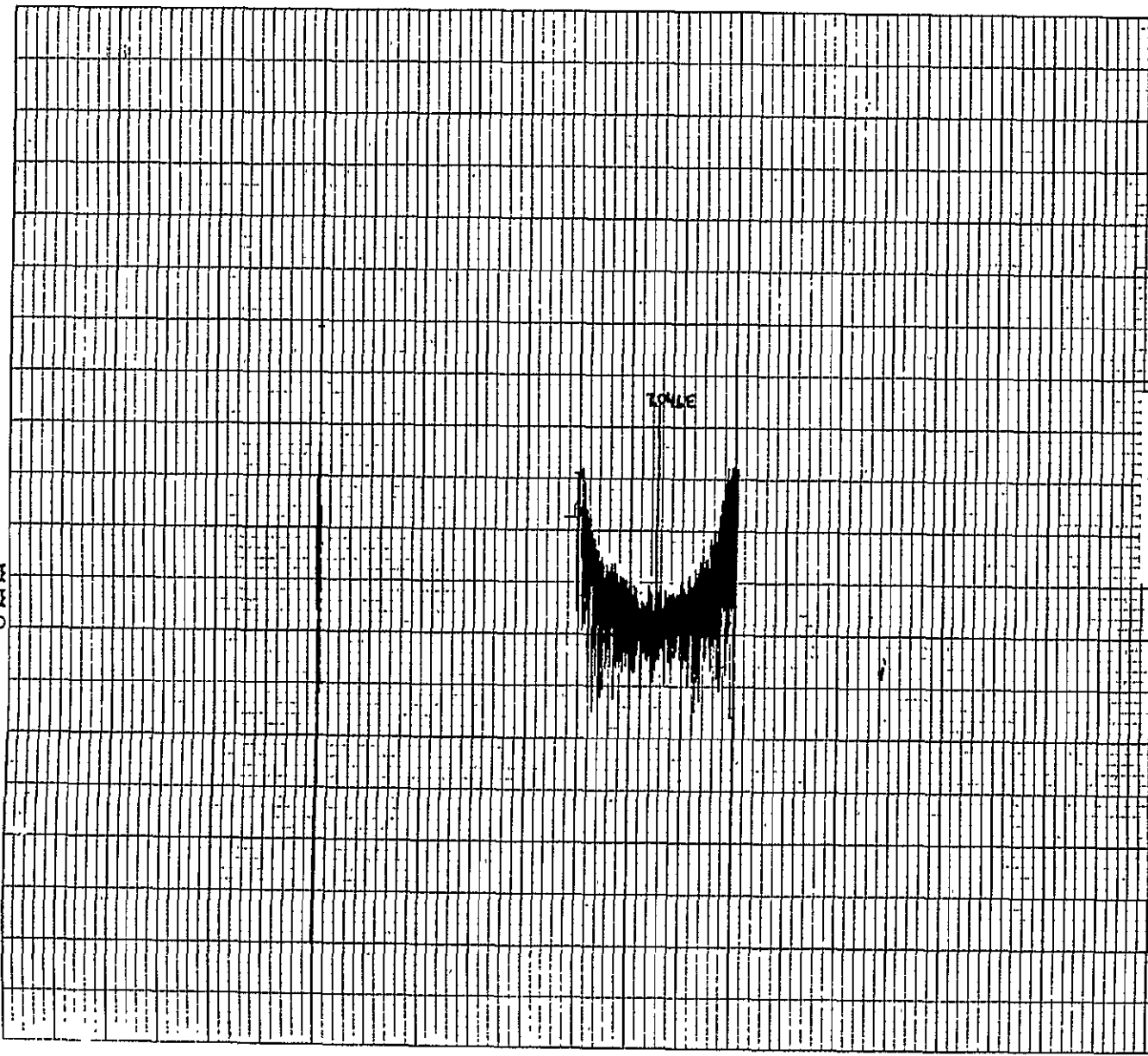
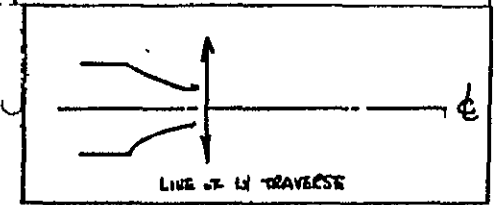
SCALE: X-AXIS = 7.07 INCH/UNIT

Y-AXIS = 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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DATE: 3/29/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 113	
PLOT IDENTIFICATION: G-406	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.M. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (M.D.) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



679

780

$$P_r = 3.128, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 1703 \text{ } ^\circ\text{R}, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2402 \text{ f/s, } h = - \text{ in.}$$

RADIAL DISTANCE

DATE: 3/29/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 113

PLOT IDENTIFICATION: G-407

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

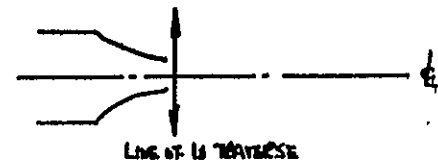
AXIAL REF. ($X=0$) - 1.885 VOLTS X $X=0.08$

LOCATIONS: TRAVERSE - 1.891 VOLTS D_{eq}

SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-


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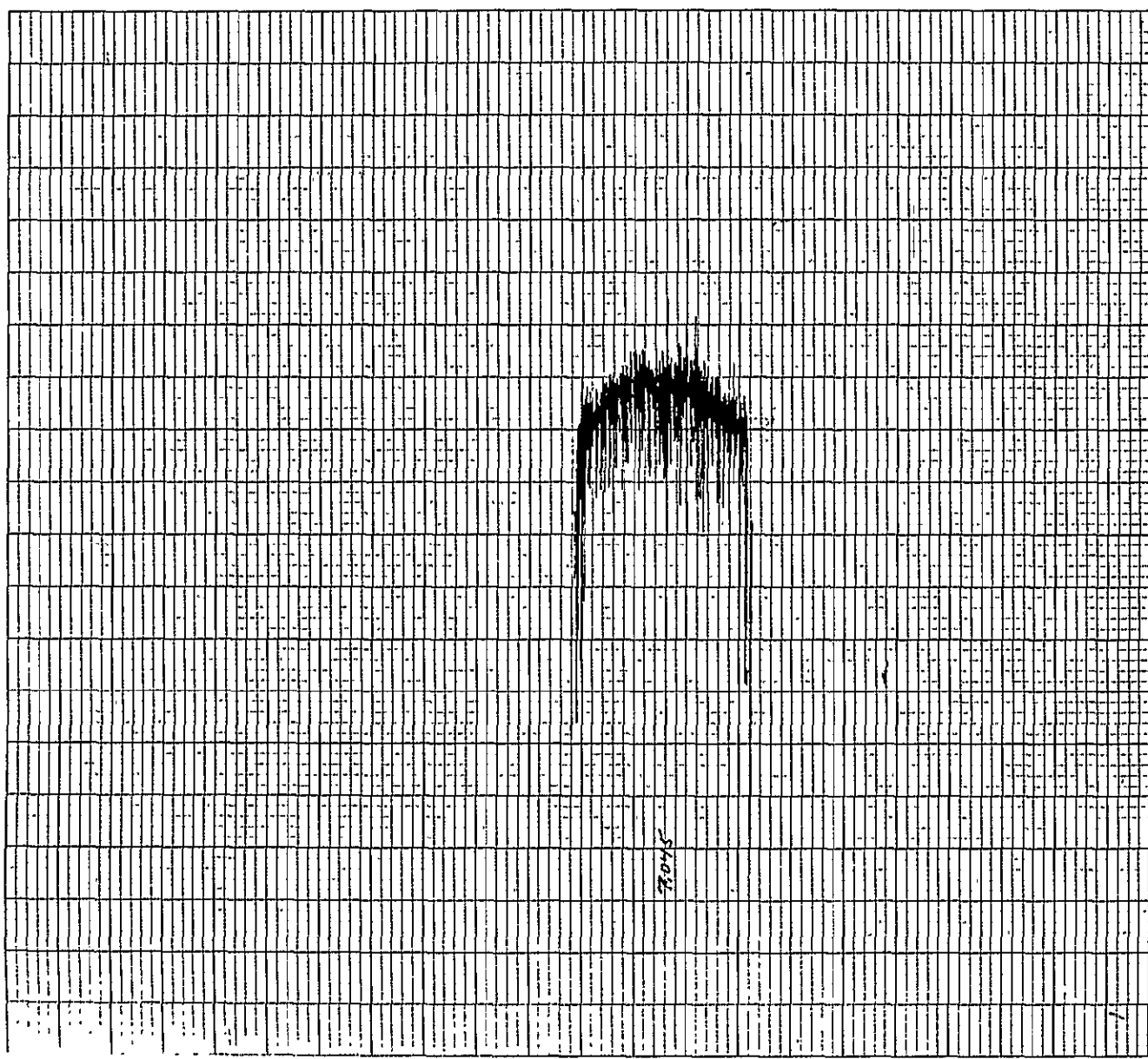
C-3

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781

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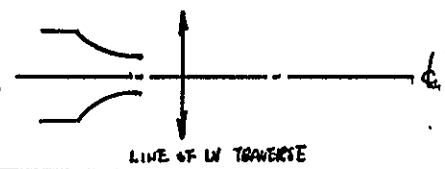
DATE: 3/29/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 113	
PLOT IDENTIFICATION : G - 408	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. ($x=0$) - 1.885 VOLTS $\frac{x}{D_{eq}}$	
LOCATIONS: TRAVERSE - 1.962 VOLTS $\frac{x}{D_{eq}}$	
SCALE : X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LI TRAVERSE</p>	

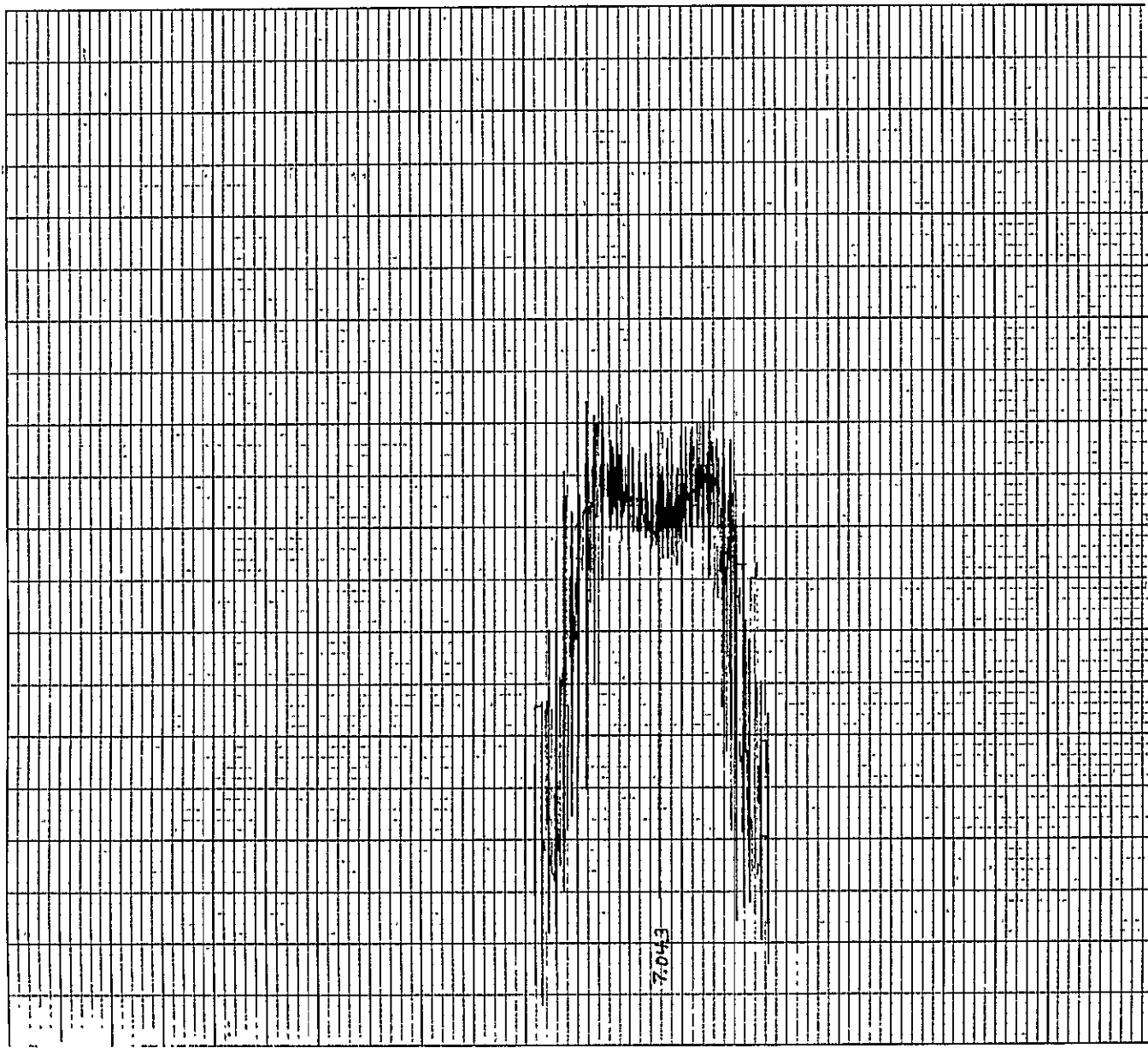
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782

 $P_T = 3.128$, $V_{a/c} = 0$ f/s $T_T = 1703$ °R, $D_{eq} = 5.09$ in. $V_j = 2402$ f/s, $h = -$ in. $V_j = 2402$ f/s $V_D = 1$

DATE: 3/29/82	NOZZLE: # 1
TEST POINT: L.V. -	ACOUSTIC - 113
PLOT IDENTIFICATION: G-409	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. ($x=0$) - 1.885 VOLTS	$x = 1.07$
LOCATIONS: TRAVERSE - 1.962 VOLTS	D_{eq}
SCALE: X-AXIS= 3.33	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H-	TO H-

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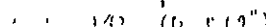
DATE: 3/29/82		NOZZLE: #1	
TEST POINT: L.V. -		ACOUSTIC - 113	
PLOT IDENTIFICATION: G-410			
TRAVERSE DETAILS.			
AXIAL <input type="checkbox"/>	: ϕ - <input type="checkbox"/>	OFFSET	- <input type="checkbox"/>
RADIAL	REF. (ϕ) -	VOLTS $\frac{R}{R_2}$	=
LOCATIONS	TRAVERSE -	VOLTS $\frac{R}{R_2}$	=
RADIAL <input checked="" type="checkbox"/>	: E.W. - <input checked="" type="checkbox"/>	N.S. - <input type="checkbox"/>	
AXIAL	REF. (X=0) - 1.885	VOLTS $\frac{X}{D_{eq}}$	= 4.3
LOCATIONS	TRAVERSE - 2.194	VOLTS $\frac{X}{D_{eq}}$	=
SCALE :	X-AXIS= 3.33	INCH/UNIT	
	Y-AXIS= 400	P.P.S./UNIT	
HISTOGRAMS: H- TO H-			
<p>LINE OF LI TRAVERSE</p>			

ORIGINAL PAGE 190
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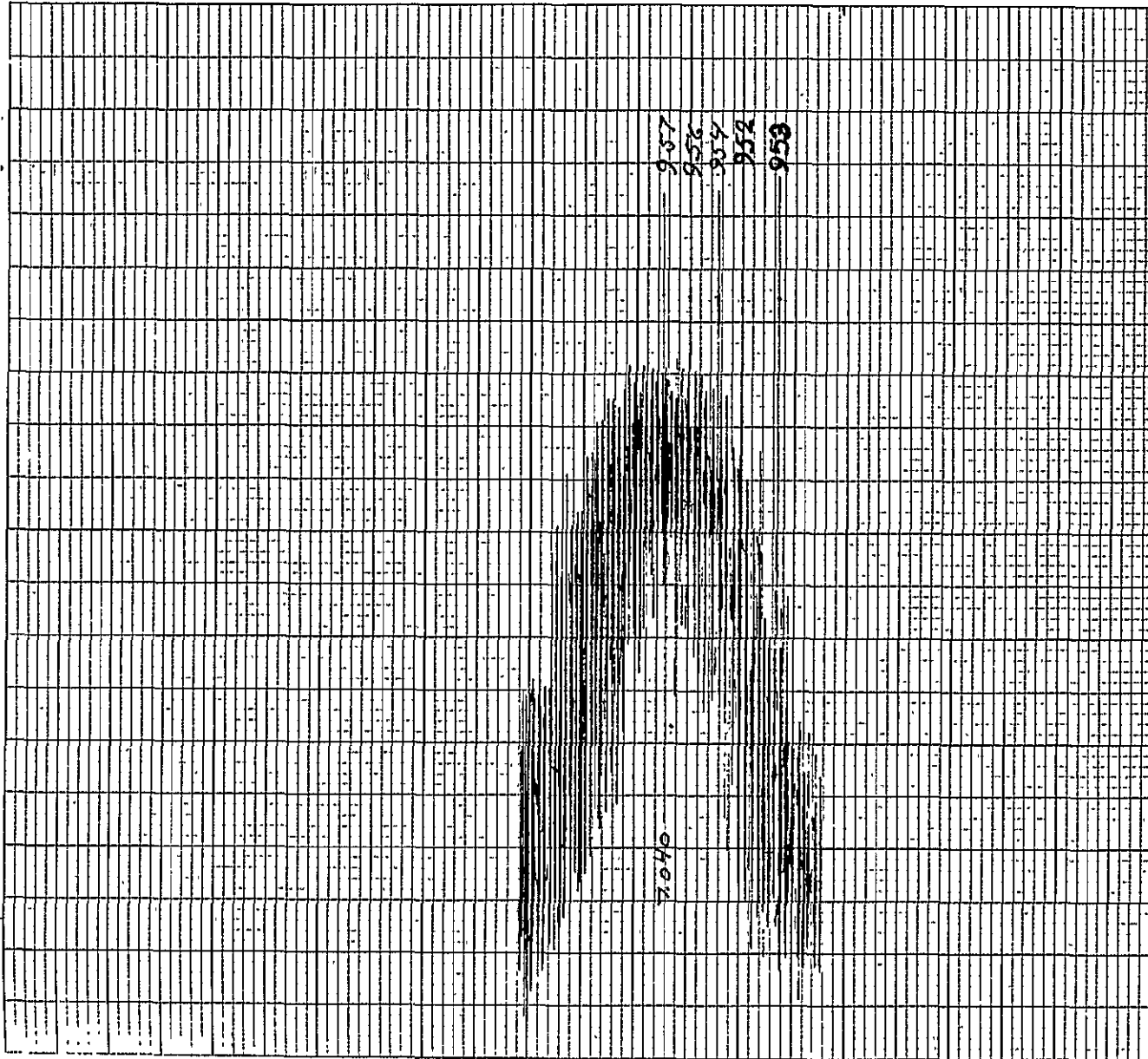
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LINE OF V VORTICES


$$v_1 = \underline{2402} \text{ f/s}, h_1 = \underline{\quad} \text{ in.}$$

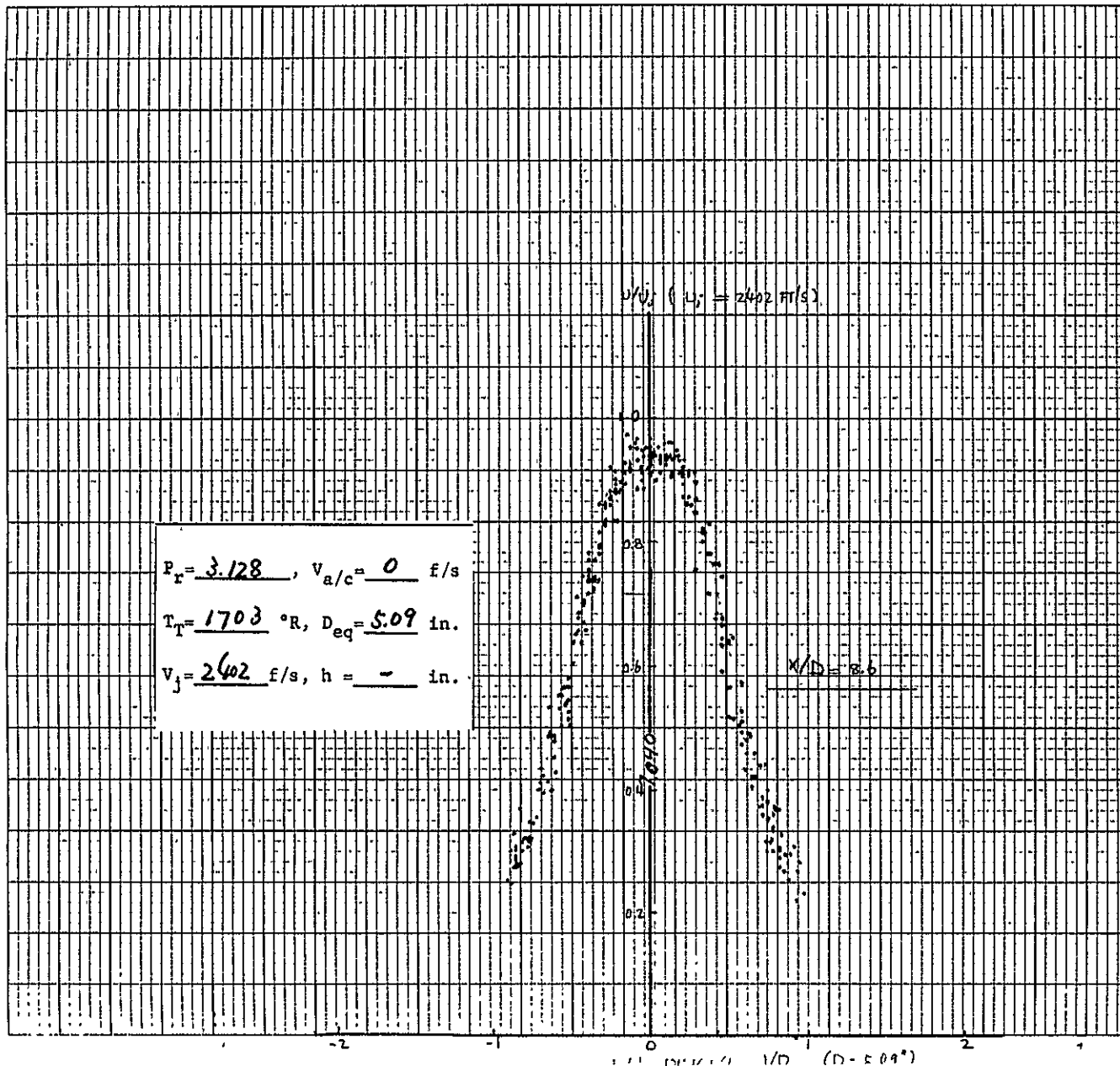
785



DATE: 3/29/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 113	
PLOT IDENTIFICATION: G - 412	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/> RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$ LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL <input checked="" type="checkbox"/> : E.W. - x ; N.S. - <input type="checkbox"/> AXIAL REF. (ϕ) - VOLTS $\frac{X}{D}$ LOCATIONS TRAVERSE - 256 VOLTS $\frac{X}{D} = 8.6$ eq	
SCALE : X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H-952 TO H-957	

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987



DATE: 3/29/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 113

PLOT IDENTIFICATION: G-413

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - \times ; N.S. - ☐

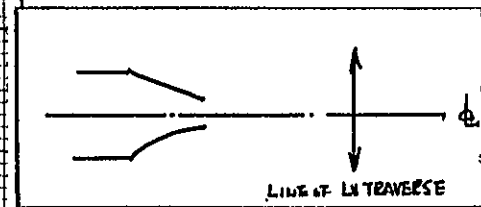
AXIAL REF. (ϕ) - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

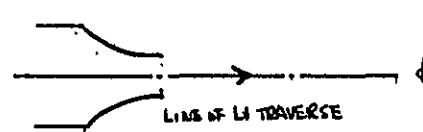
SCALE : X-AXIS= 3.33 INCH/UNIT

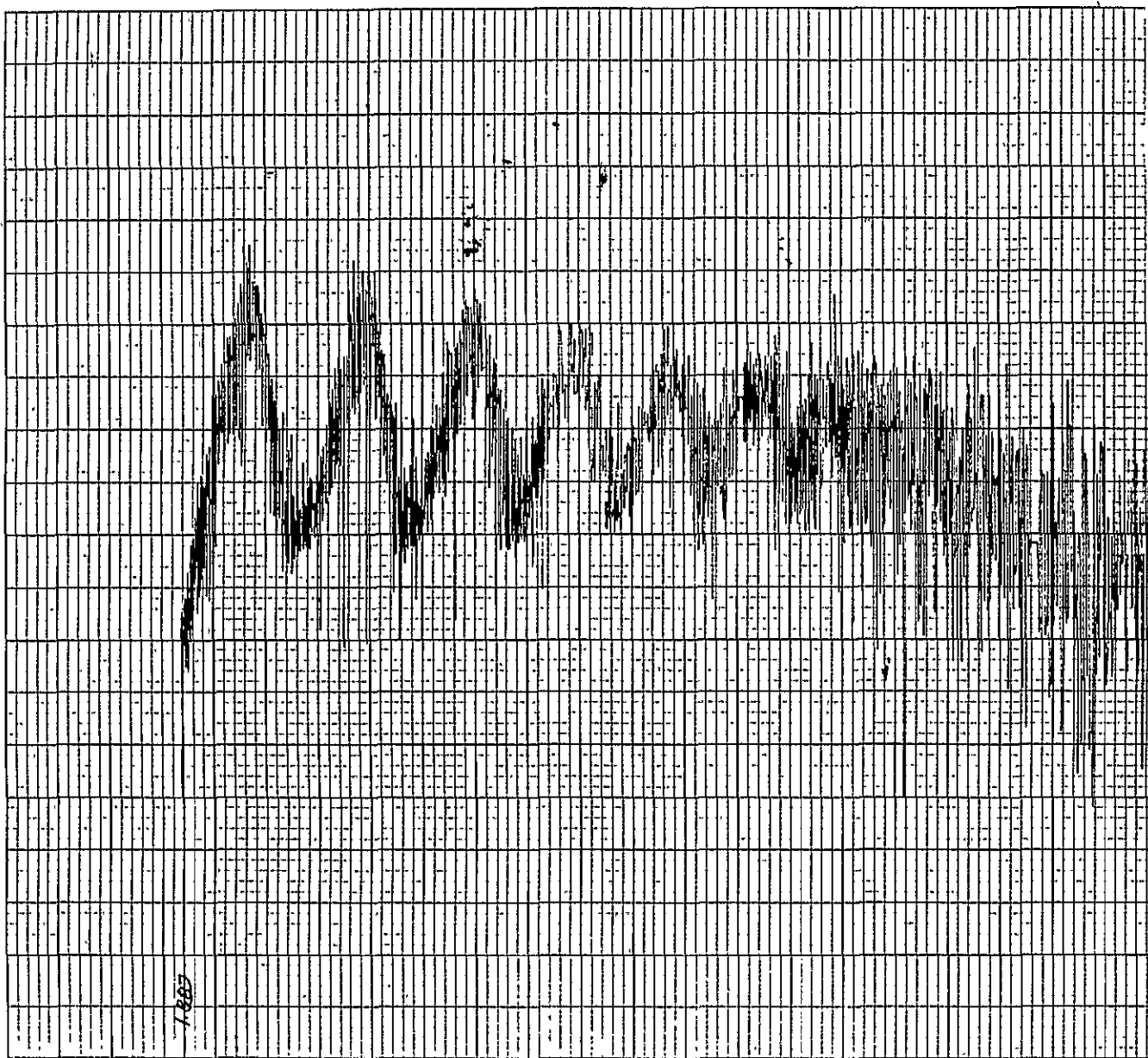
Y-AXIS= 400 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 12/	
PLOT IDENTIFICATION : G - 416	
TRAVERSE DETAILS:	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) - 7.019 VOLTS $R_2 = 0$	
LOCATIONS TRAVERSE - 7.019 VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X_{eq}	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
	



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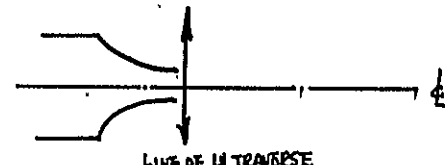
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788

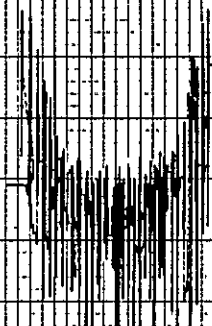
DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 121
PLOT IDENTIFICATION: G-417	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET ϕ - ϕ	
RADIAL REF. (ϕ) - 7.018 VOLTS	$R_2 = 0$
LOCATIONS TRAVERSE - 7.018 VOLTS	
RADIAL <input type="checkbox"/> : E.W. - ϕ ; N.S. - ϕ	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.7 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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AXIAL HEAD TRAVERSE: $D_{eq} (D_{eq} = 5.457 \text{ in.})$

$P_r = 3.316$, $V_{a/c} = 0$ f/s
 $T_T = 1708$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2457$ f/s, $h =$ in.

DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 12/	
PLOT IDENTIFICATION : G-418	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (X=0) - 1.887 VOLTS $\frac{X}{D_{eq}} = 0.1$	
LOCATIONS: TRAVERSE - 1.891 VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 3.33	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H- TO H-	
	



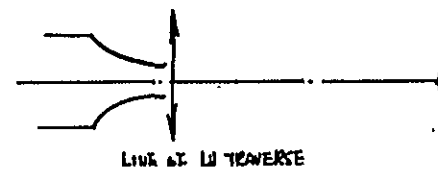
791

$$P_T = 3.316, v_{a/c} = 0 \text{ f/s}$$

$$T_T = 1708^\circ R, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2457 \text{ f/s, } h = - \text{ in.}$$

DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 12/
PLOT IDENTIFICATION: G-419	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. ($y=0$) - 1.887 VOLTS X	
LOCATIONS: TRAVERSE - 1.891 VOLTS D_{eq}	$D_{eq} = 0.1$
SCALE: X-AXIS= 3.33	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H- TO H-	



DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 12/	
PLOT IDENTIFICATION : G - 420	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. ($Y=0$) - 1.884 VOLTS X = 1.1	
LOCATIONS TRAVERSE - 1.462 VOLTS D_{eq}	
SCALE : X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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 $P_r = 3.316$, $V_{a/c} = 0$ F/s $T_T = 1708$ °R, $D_{eq} = 5.09$ in. $V_j = 2457$ F/s, $h = -$ in. $U/U_j (P_j = 2457 \text{ F/s})$ $x/D = 1.1$

DATE: 2/30/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 12/
PLOT IDENTIFICATION: G - 42/	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} =$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2} =$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (γ_{eq}) - 1.114 VOLTS	$\frac{x}{D_{eq}} = 1.1$
LOCATIONS TRAVERSE - 1.162 VOLTS	
SCALE : X-AXIS= 3.3	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H- TO H-	

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DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 121
PLOT IDENTIFICATION: G-422	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - 1.884	VOLTS $\frac{X}{D_{eq}} = 4.2$
LOCATIONS: TRAVERSE - 2.194	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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 $P_r = 3.316$, $V_{a/c} = 0$ f/s

 $T_r = 1708$ °R, $D_{eq} = 5.09$ in.

 $V_j = 2457$ f/s, $h =$ in.

 $U/V_j = (2457 \text{ f/s})$

1.2

1.0

0.8

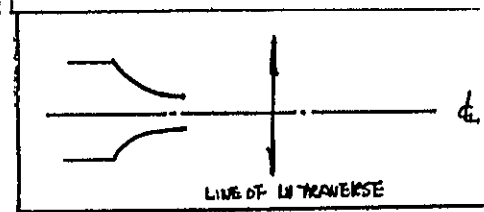
0.6

0.4

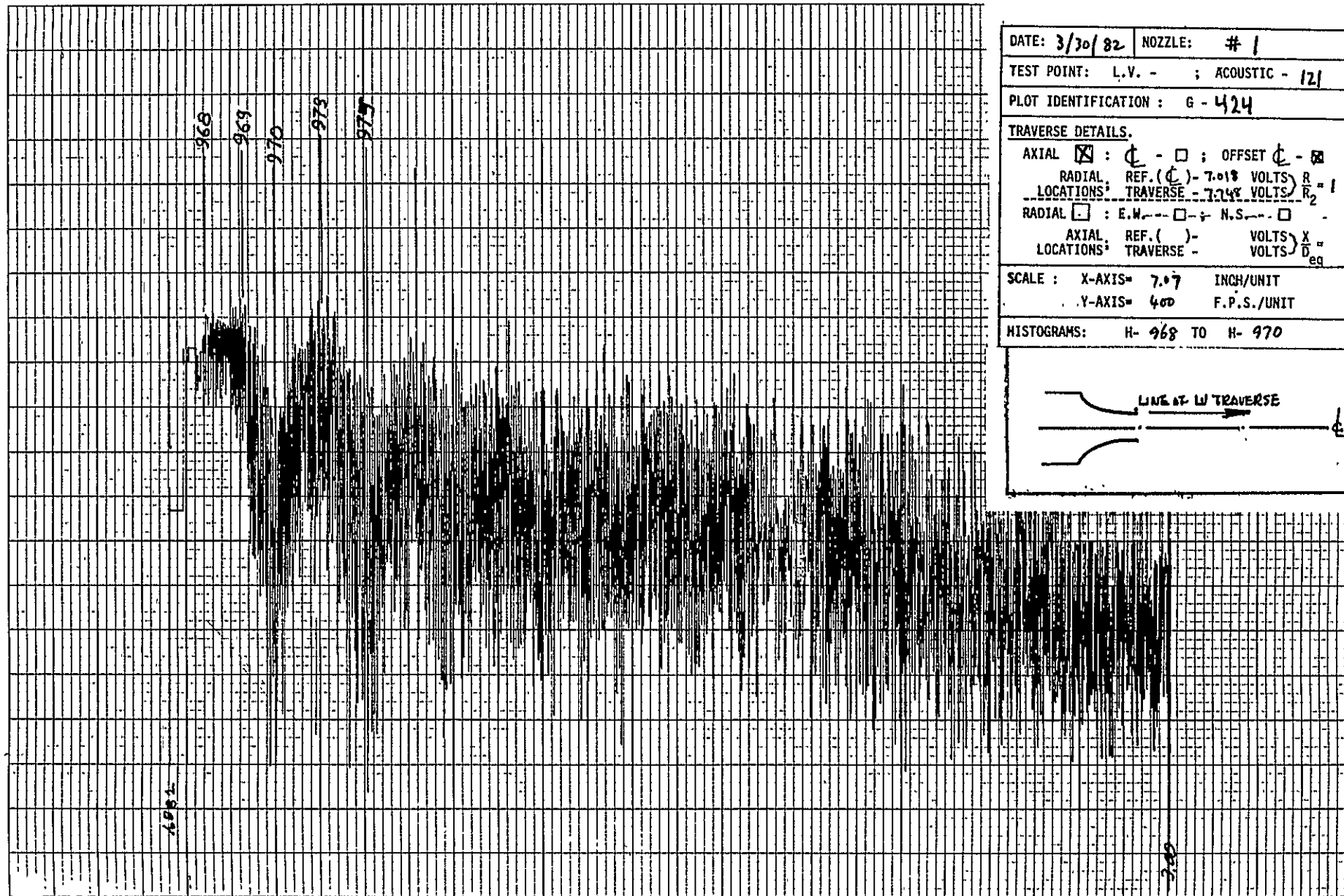
0.2

 $X/D = 4.2$

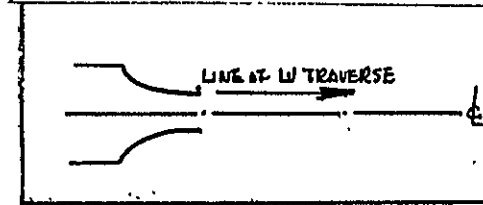
DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 12/
PLOT IDENTIFICATION: G-423	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET ϕ - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - 1.884 VOLTS	$X/D = 4.2$
LOCATIONS TRAVERSE - 2.194 VOLTS	D_{eq}
SCALE: X-AXIS= 3.33	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H- TO H-	


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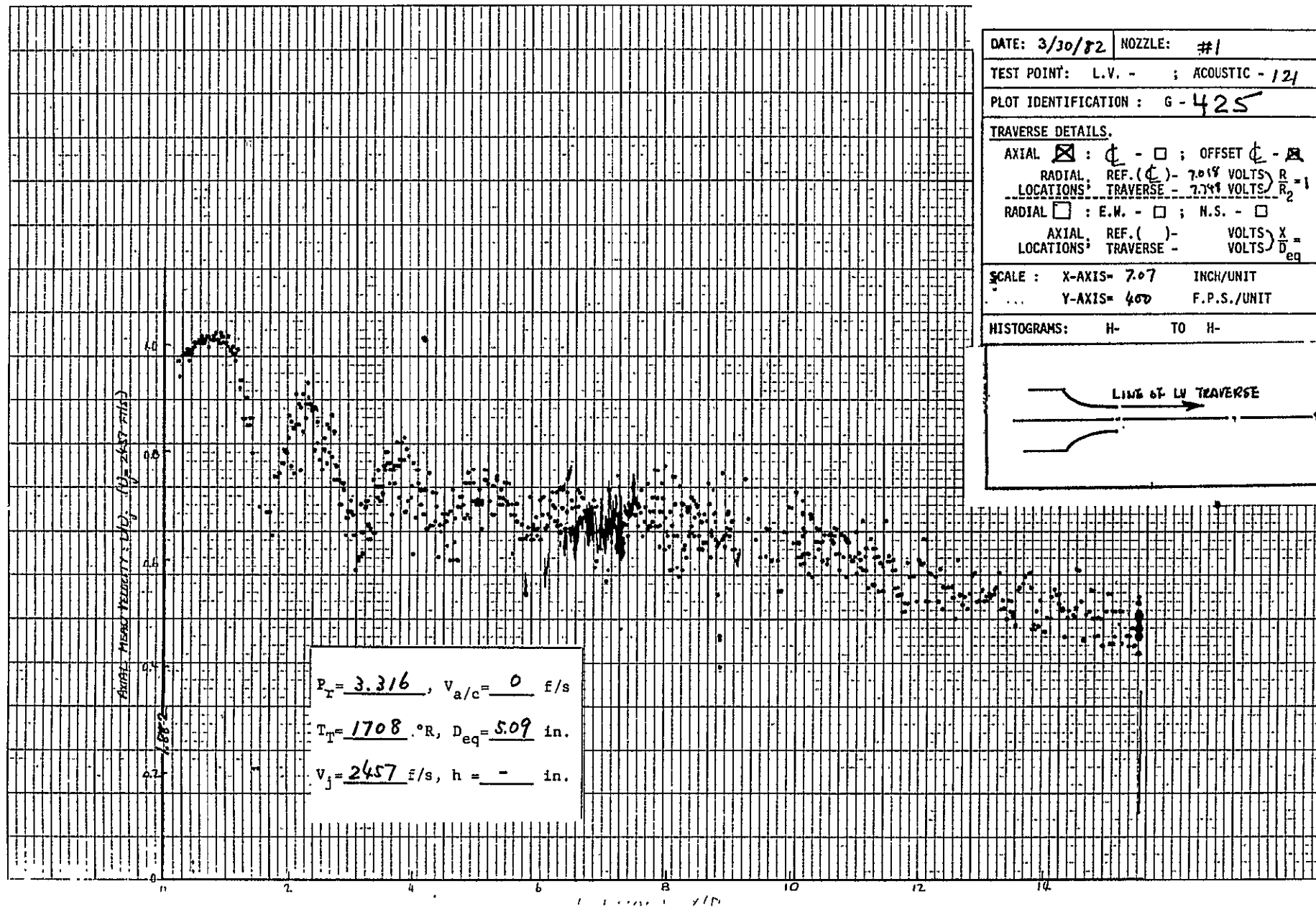
DATE: 3/30/82	NOZZLE: # 1
TEST POINT: L.V. - ; ACOUSTIC - 121	
PLOT IDENTIFICATION: G - 424	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET ϕ - \square	
RADIAL REF. (ϕ) - 7.018 VOLTS $\frac{R}{R_2} = 1$	
LOCATIONS: TRAVERSE - 7.744 VOLTS $\frac{R}{R_2} = 1$	
RADIAL <input type="checkbox"/> : E.W. - \square - \square N.S. - \square	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE: X-AXIS= 7.7 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- 968 TO H- 970	



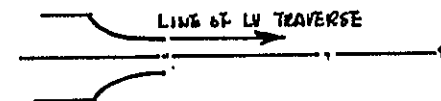
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262

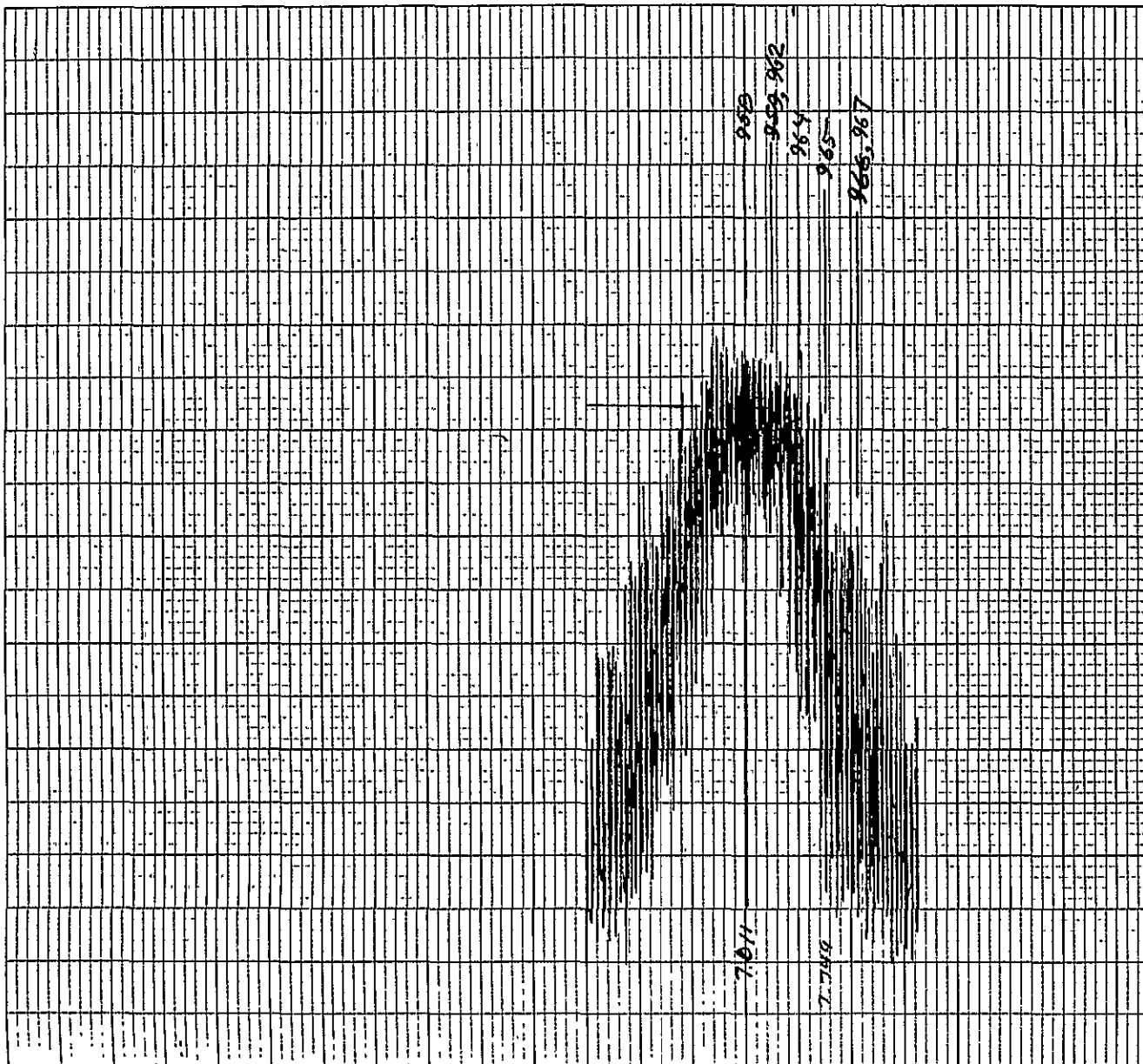
DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. -	ACOUSTIC - 121
PLOT IDENTIFICATION: G - 425	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET ϕ - \square	
RADIAL, REF. (ϕ) - 7.018 VOLTS	$R_2 = 1$
LOCATIONS, TRAVERSE - 7.749 VOLTS	R_2
RADIAL <input type="checkbox"/> : E.W. - \square ; N.S. - \square	
AXIAL, REF. () - VOLTS	$X_{D_{eq}}$
LOCATIONS, TRAVERSE - VOLTS	D_{eq}
SCALE : X-AXIS= 7.07	INCH/UNIT
Y-AXIS= 400	F.P.S./UNIT
HISTOGRAMS: H-	TO H-



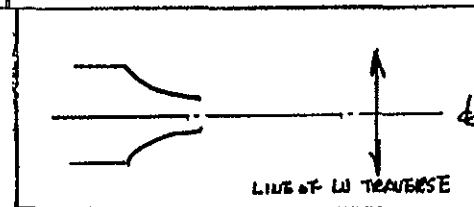
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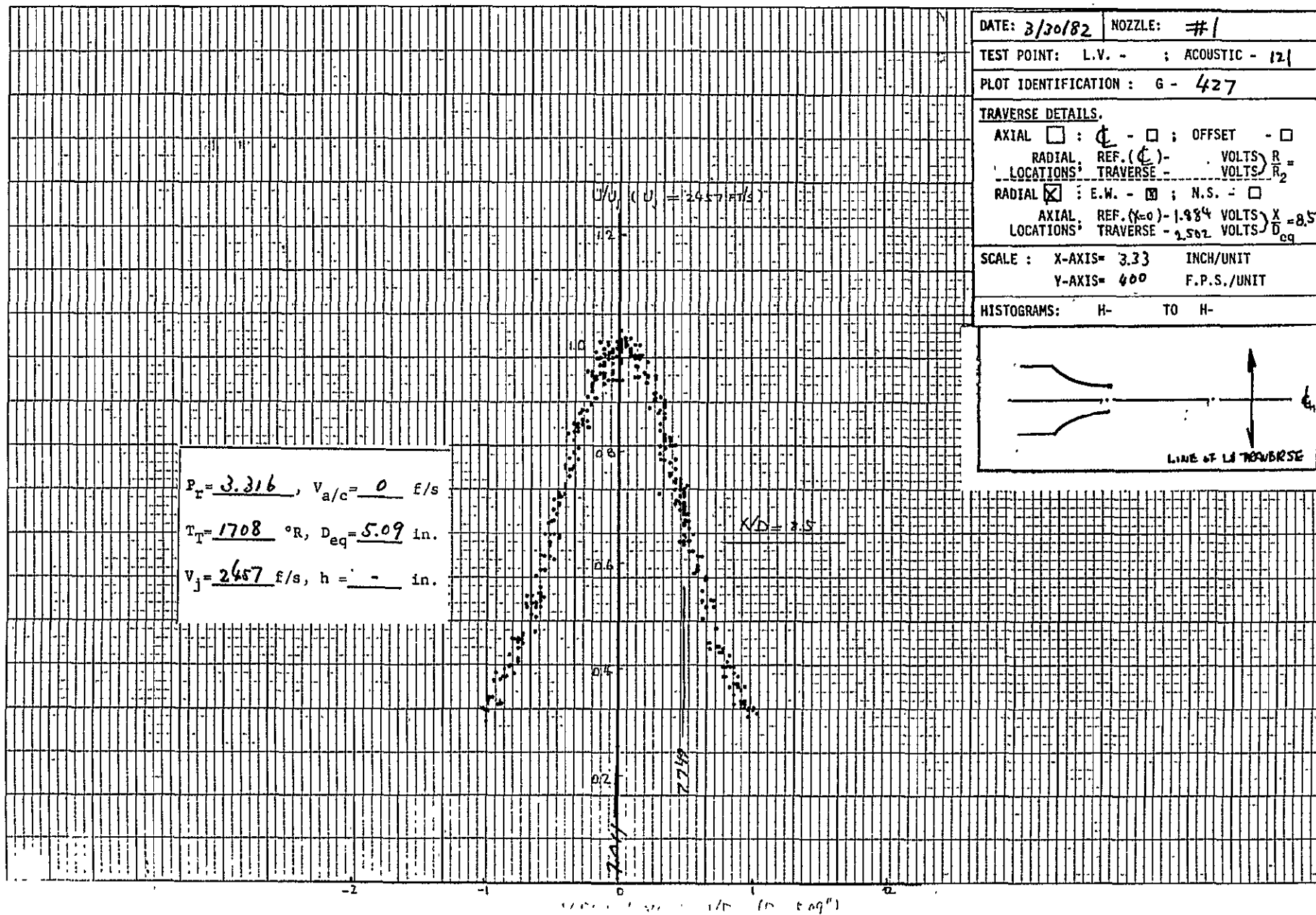
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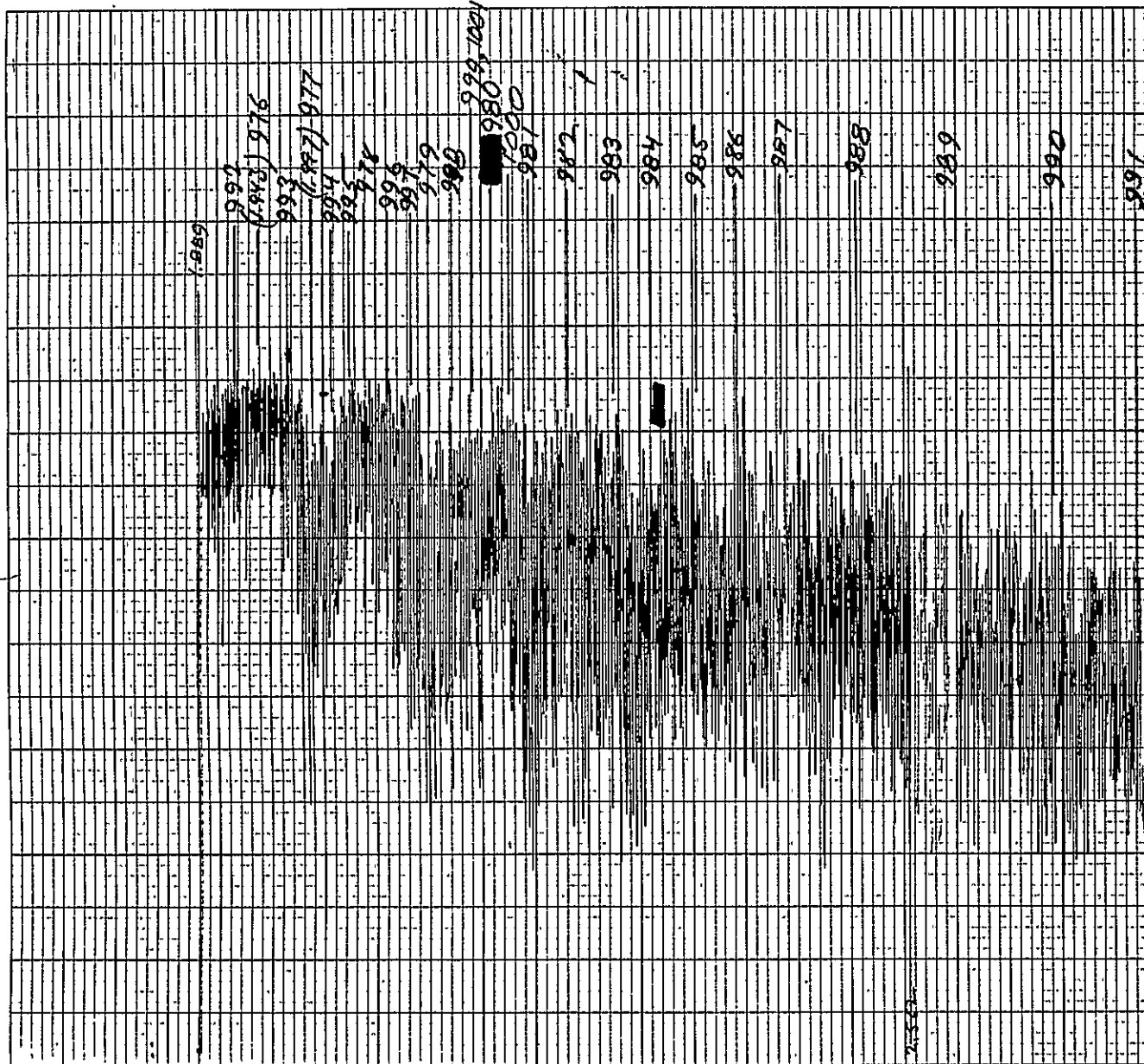
DATE: 3/30/82	NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 12/	
PLOT IDENTIFICATION: G - 426	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. ($X=0$) - 1.914 VOLTS $X_D = 8.5$	
LOCATIONS: TRAVERSE - 2.502 VOLTS D_{eq}	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 400 F.P.S./UNIT	
HISTOGRAMS: H- 958 TO H- 967	



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DATE: 3/31/82	NOZZLE: #1
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TEST POINT: L.V. - ; ACOUSTIC - 121

PLOT IDENTIFICATION : G-428

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☒

RADIAL REF. (C) - VOLTS $\frac{R}{R_2} = 1$
LOCATIONS: TRAVERSE - VOLTS

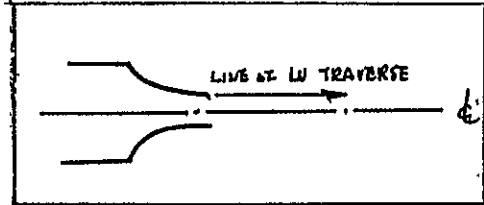
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

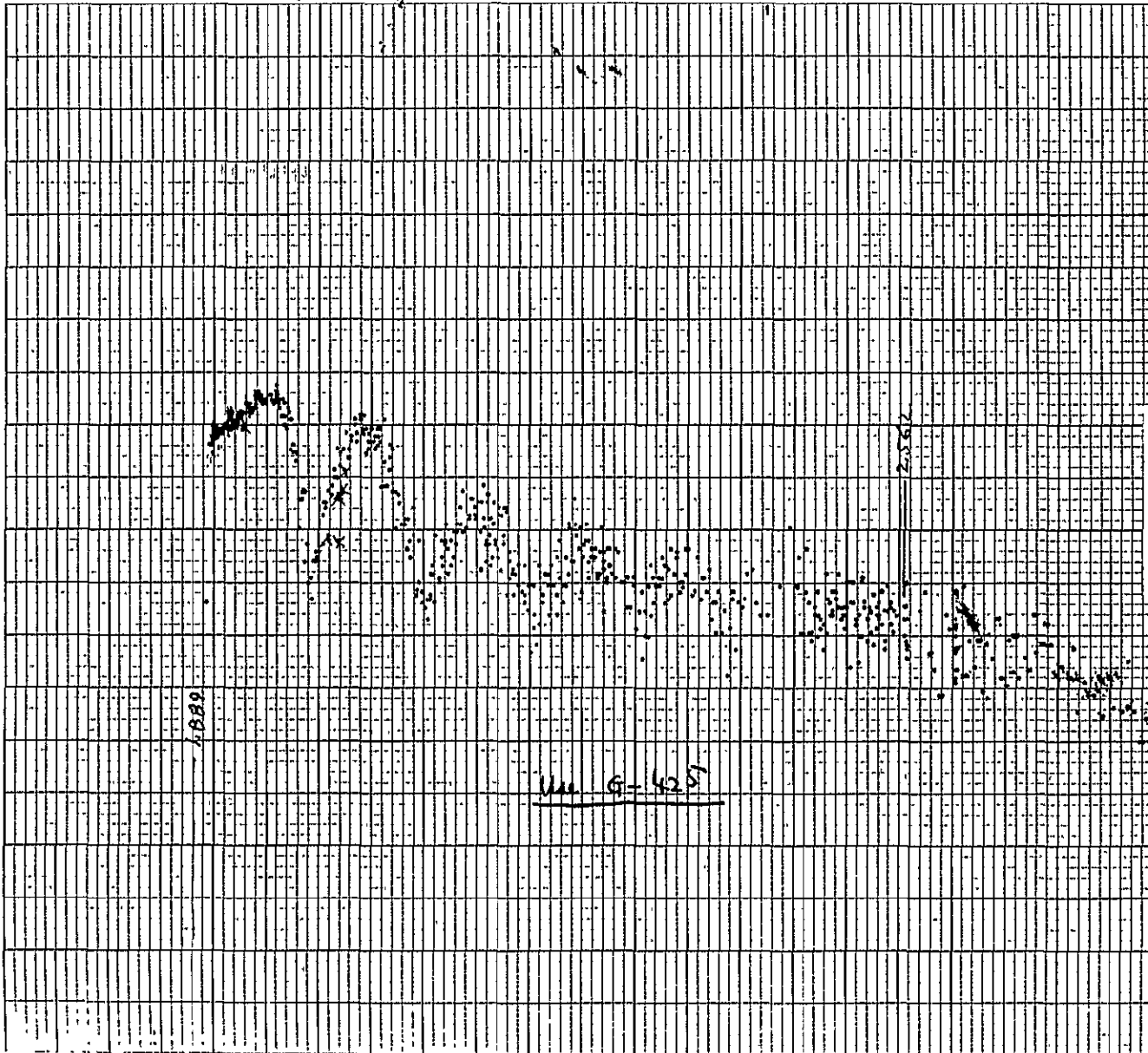
AXIAL; REF. ()- VOLTS } $\frac{X}{D} =$
LOCATIONS; TRAVERSE - VOLTS } D_{eq}

SCALE : X-AXIS= 7.07 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H-976 TO H-1001





DATE: 3/31/81		NOZZLE: #1	
TEST POINT: L.V. -		ACOUSTIC - 121	
PLOT IDENTIFICATION: G-429			
TRAVERSE DETAILS.			
AXIAL	<input checked="" type="checkbox"/>	ϕ - <input type="checkbox"/>	OFFSET - <input checked="" type="checkbox"/>
RADIAL	REF. (ϕ) -	VOLTS $\frac{R}{R_2}$	
LOCATIONS	TRAVERSE -	VOLTS $\frac{R}{R_2}$	
RADIAL	<input type="checkbox"/>	E.W. - <input type="checkbox"/>	N.S. - <input type="checkbox"/>
AXIAL	REF. () -	VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS	TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$	
SCALE: X-AXIS= 7.07		INCH/UNIT	
Y-AXIS= 395		F.P.S./UNIT	
HISTOGRAMS: H-		TO H-	

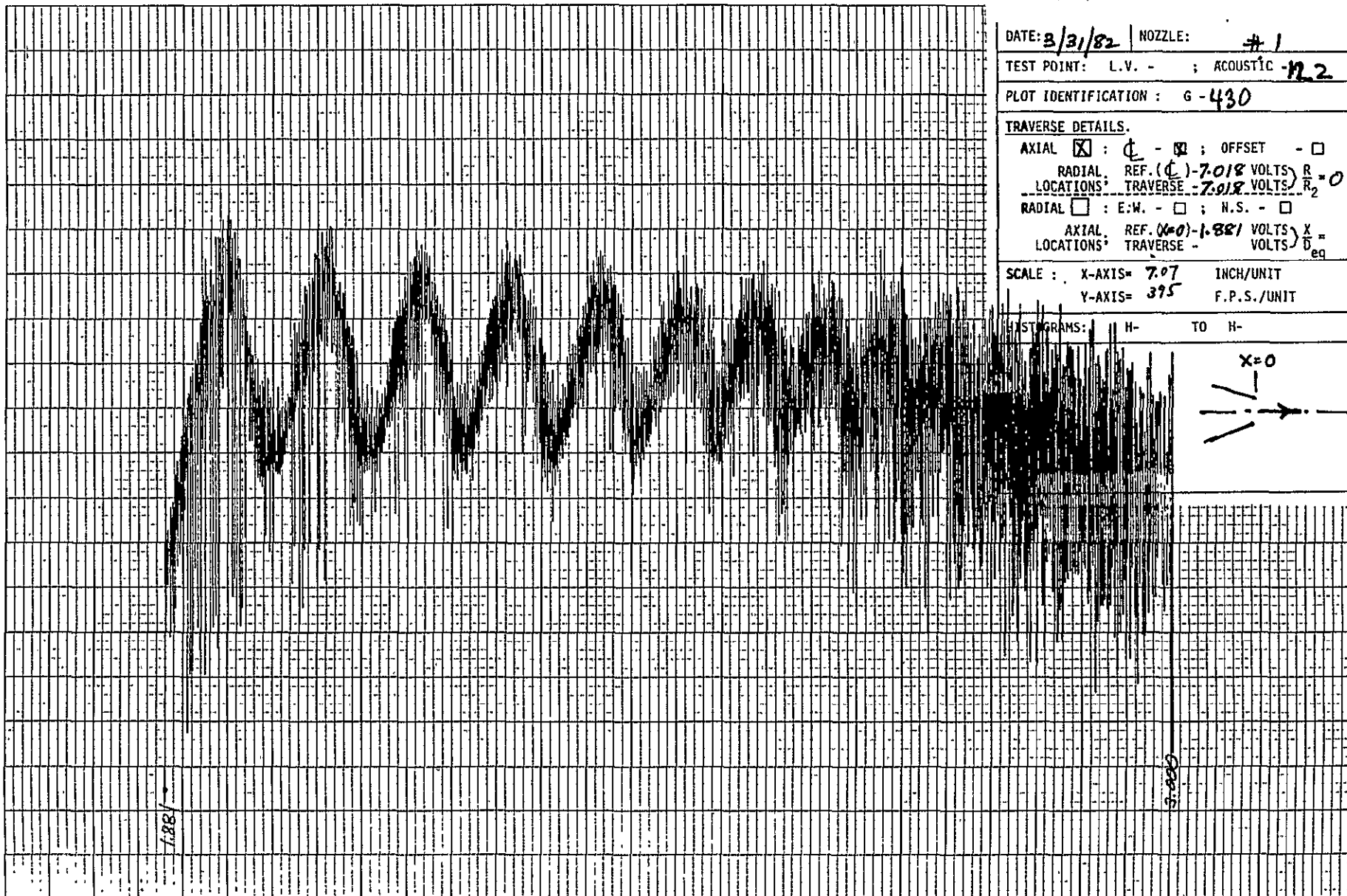
Line G-429

3.003

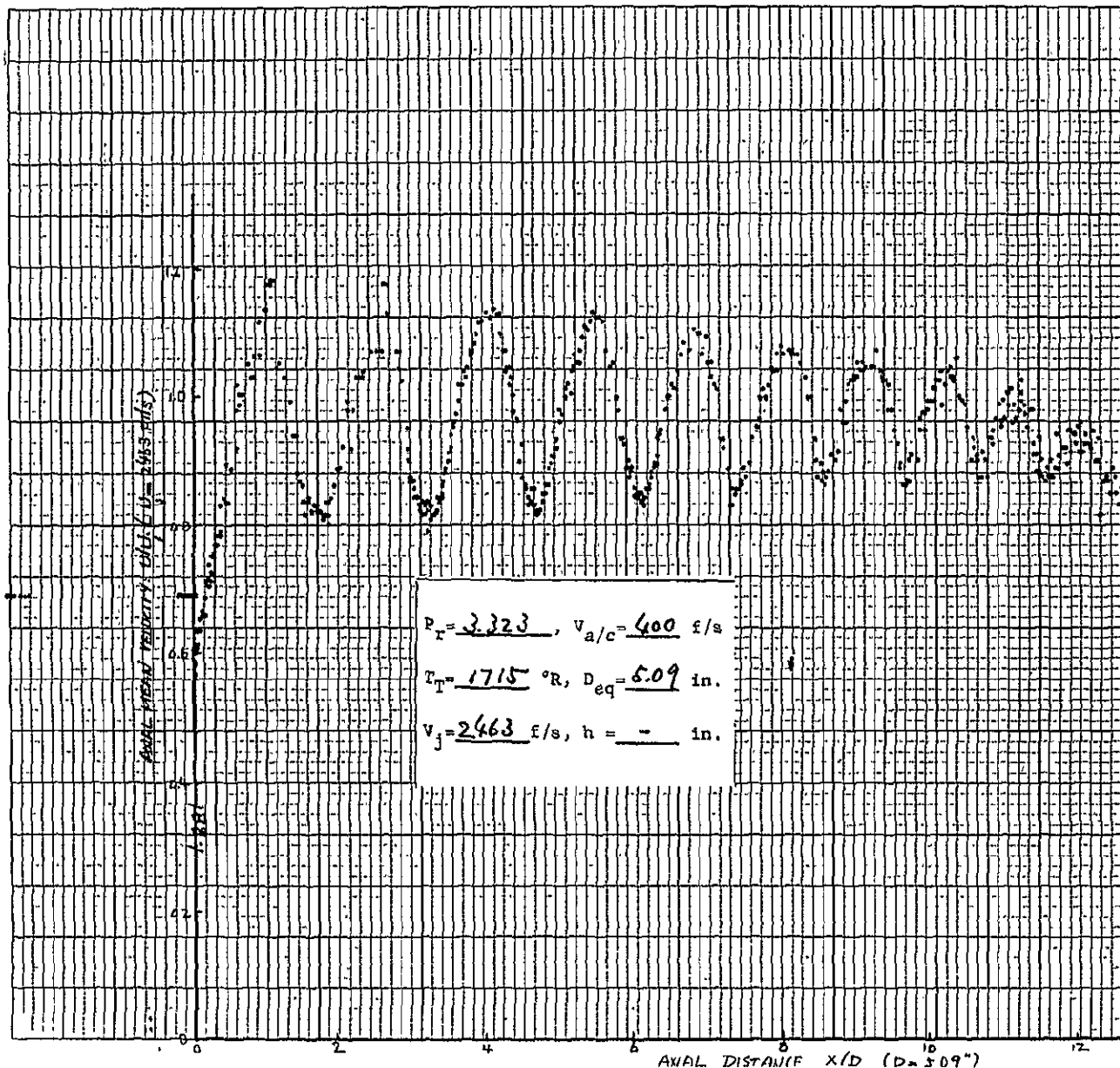
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DATE: 3/3/82 NOZZLE: # 1
 TEST POINT: L.V. - ; ACOUSTIC -122
 PLOT IDENTIFICATION: G - 43)
 TRAVERSE DETAILS.
 AXIAL ☒ : ϕ - ϕ ; OFFSET - ☐
 RADIAL REF. (ϕ) - 7.018 VOLTS $R_2 = 0$
 LOCATIONS: TRAVERSE - 7.018 VOLTS $R_2 = 0$
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. (X=0) - 1.881 VOLTS $X = 0$
 LOCATIONS: TRAVERSE - VOLTS D_{eq}
 SCALE: X-AXIS= 7.07 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT
 HISTOGRAMS: H- TO H-



$P_T = 3.323$, $V_{a/c} = 400$ ft/s
 $T_T = 1715$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2463$ ft/s, $h = -$ in.

Mo XY1101

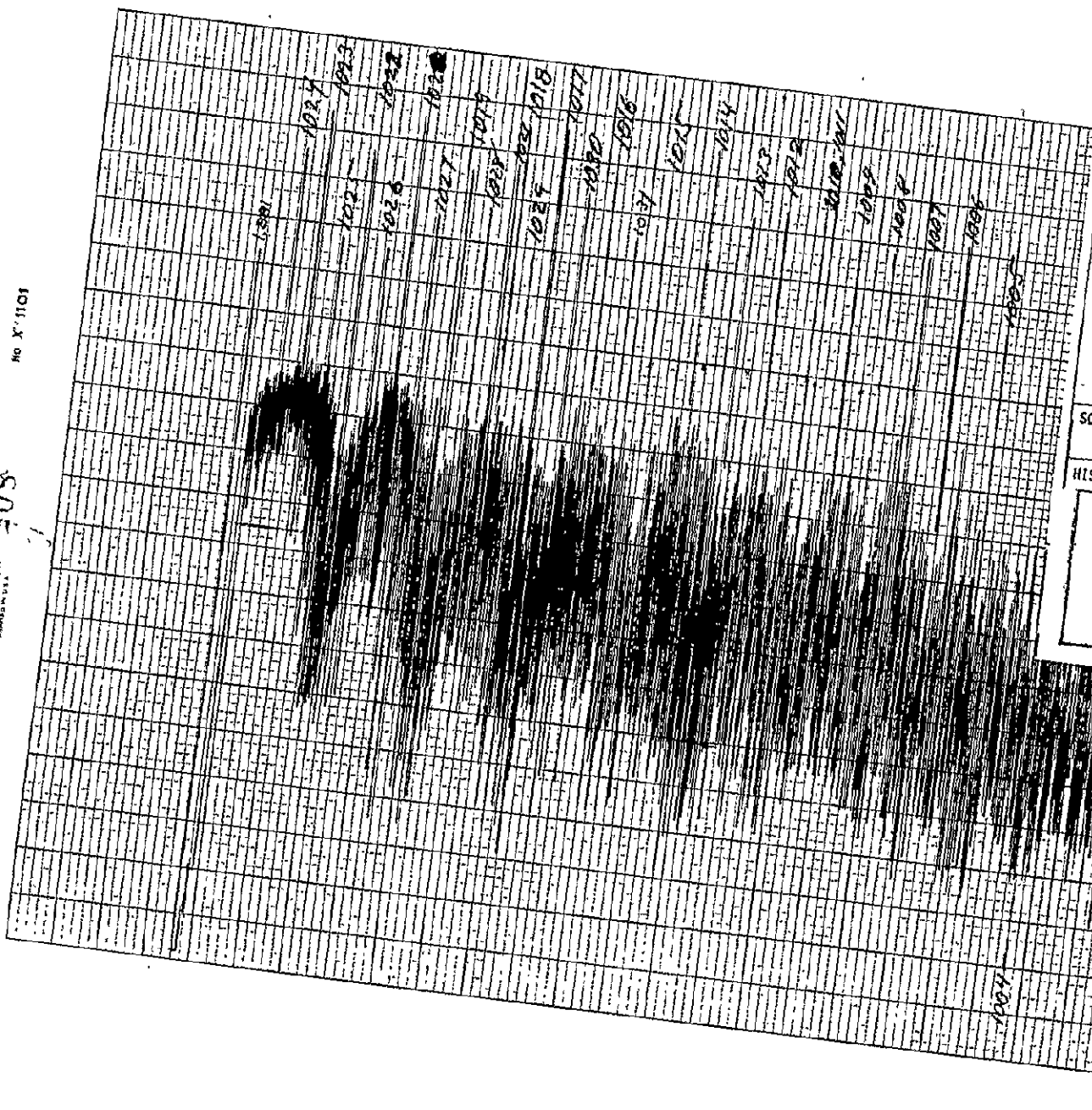
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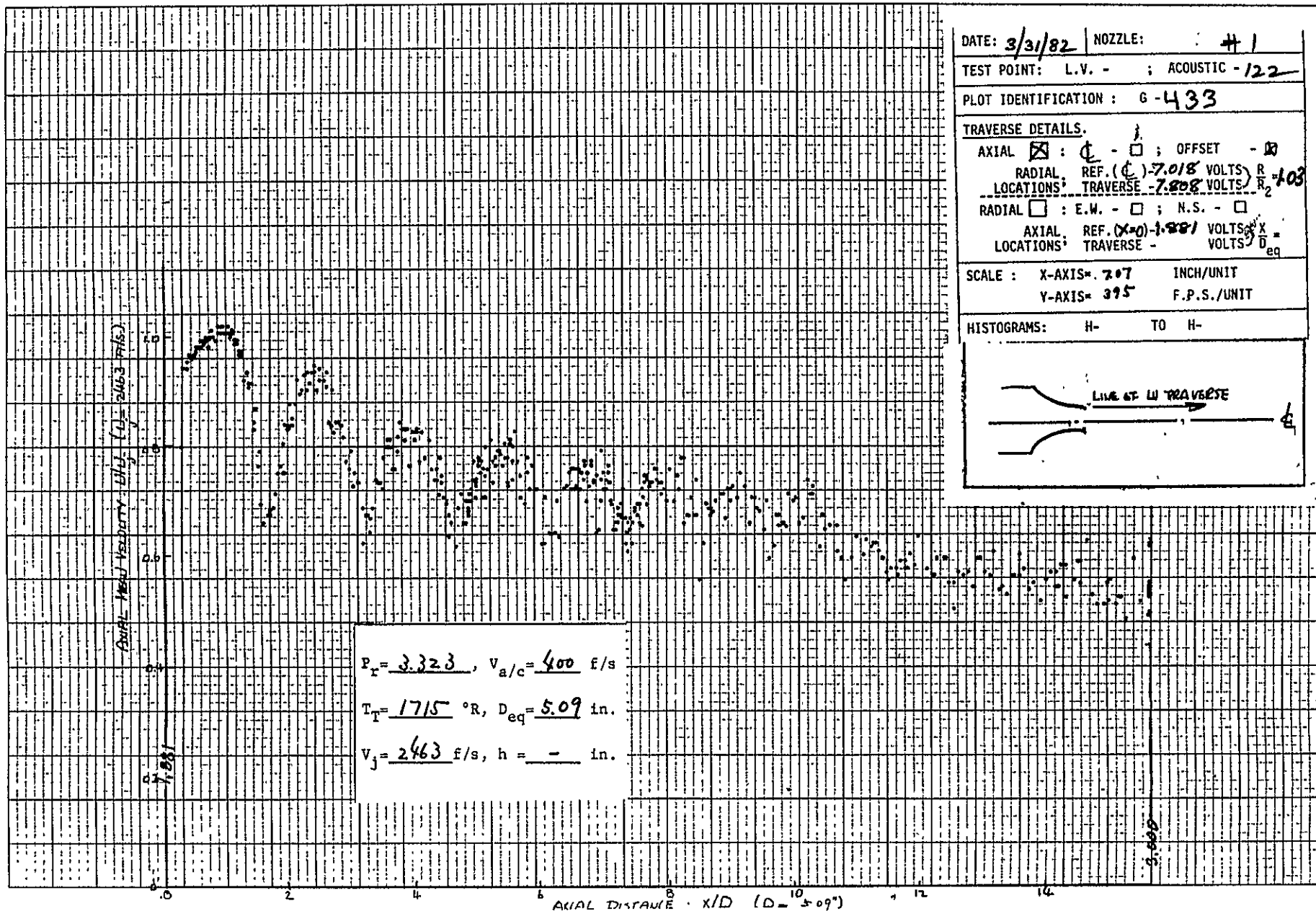
DATE: 3/31/82 NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 122
PLOT IDENTIFICATION: G-432

TRAVERSE DETAILS:
AXIAL ☒ : ϕ - ☐ : OFFSET - ☐
RADIAL REF. (C) - 7.018 VOLTS R
LOCATIONS: TRAVERSE - 7.808 VOLTS R
RADIAL ☐ : E.W. - ☐ : N.S. - ☐
AXIAL REF. (X=0) : VOLTS X
LOCATIONS: TRAVERSE - VOLTS D
eq

SCALE: X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAM: H-100% TO H-10

LINE OF LV TRAVERSE



$$P_x = 3.323, V_{a/c} = 400 \text{ ft/s}$$

$$T_T = 1715^\circ \text{R}, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2463 \text{ ft/s}, h = \text{---} \text{ in.}$$

DATE: 3/31/82 NOZZLE: #1

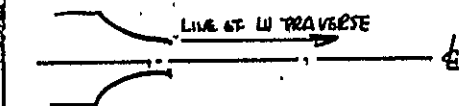
TEST POINT: L.V. - ; ACOUSTIC - 122

PLOT IDENTIFICATION: G-433

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - \square ; OFFSET - 0RADIAL REF. (ϕ) - 7.018 VOLTS $R_2 = 1.03$ LOCATIONS: TRAVERSE - 7.808 VOLTS R_2 RADIAL ☐ : E.W. - \square ; N.S. - \square AXIAL REF. ($x=0$) - 1.881 VOLTS X_{eq} LOCATIONS: TRAVERSE - VOLTS D_{eq} SCALE : X-AXIS = 7.07 INCH/UNIT
Y-AXIS = 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-

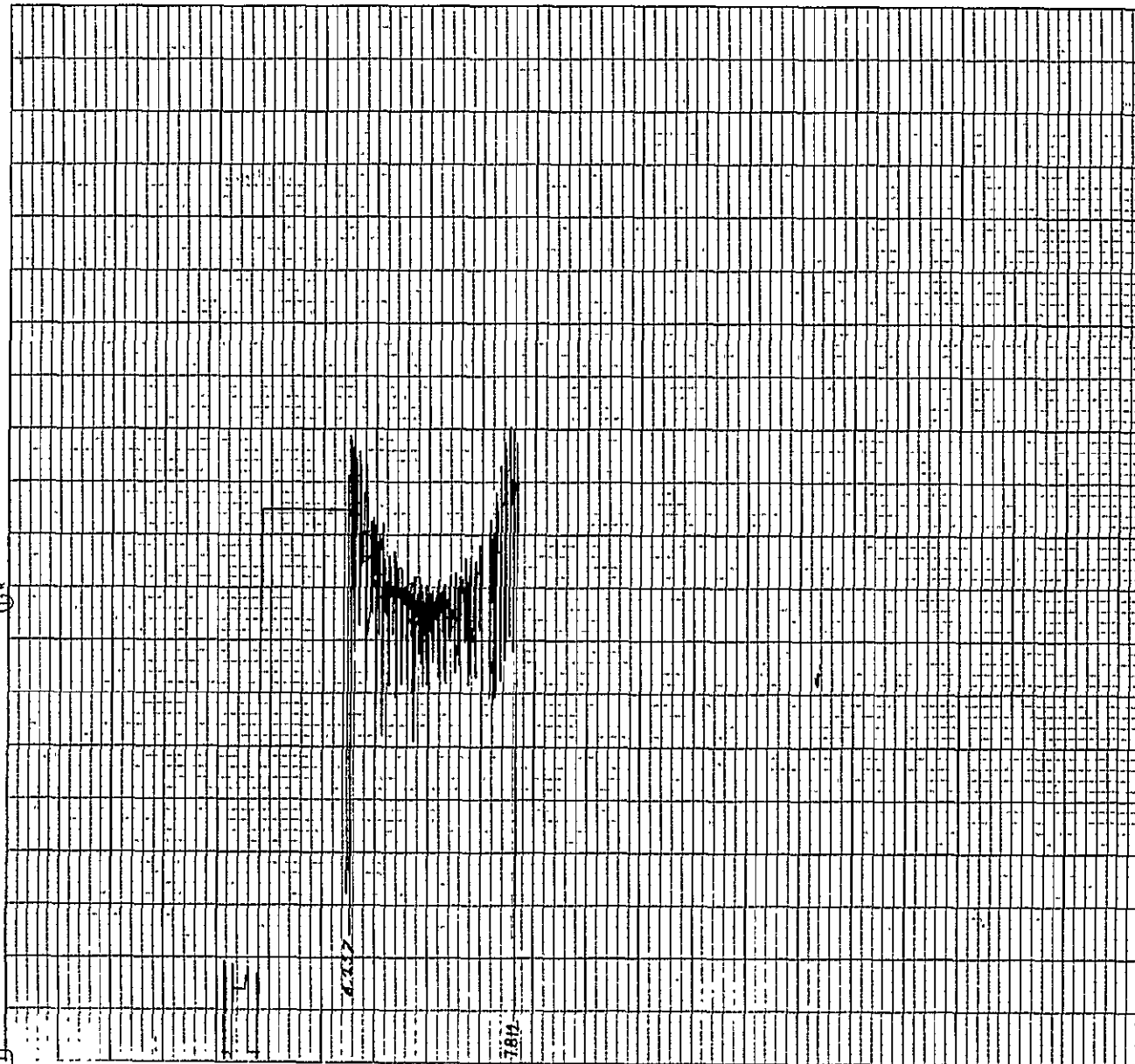


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DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - : ACOUSTIC -/22

PLOT IDENTIFICATION : G-434

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - 7.018 VOLTS R_2

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

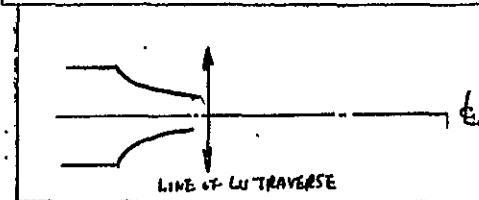
AXIAL REF. ($X=0$) - 1.881 VOLTS X

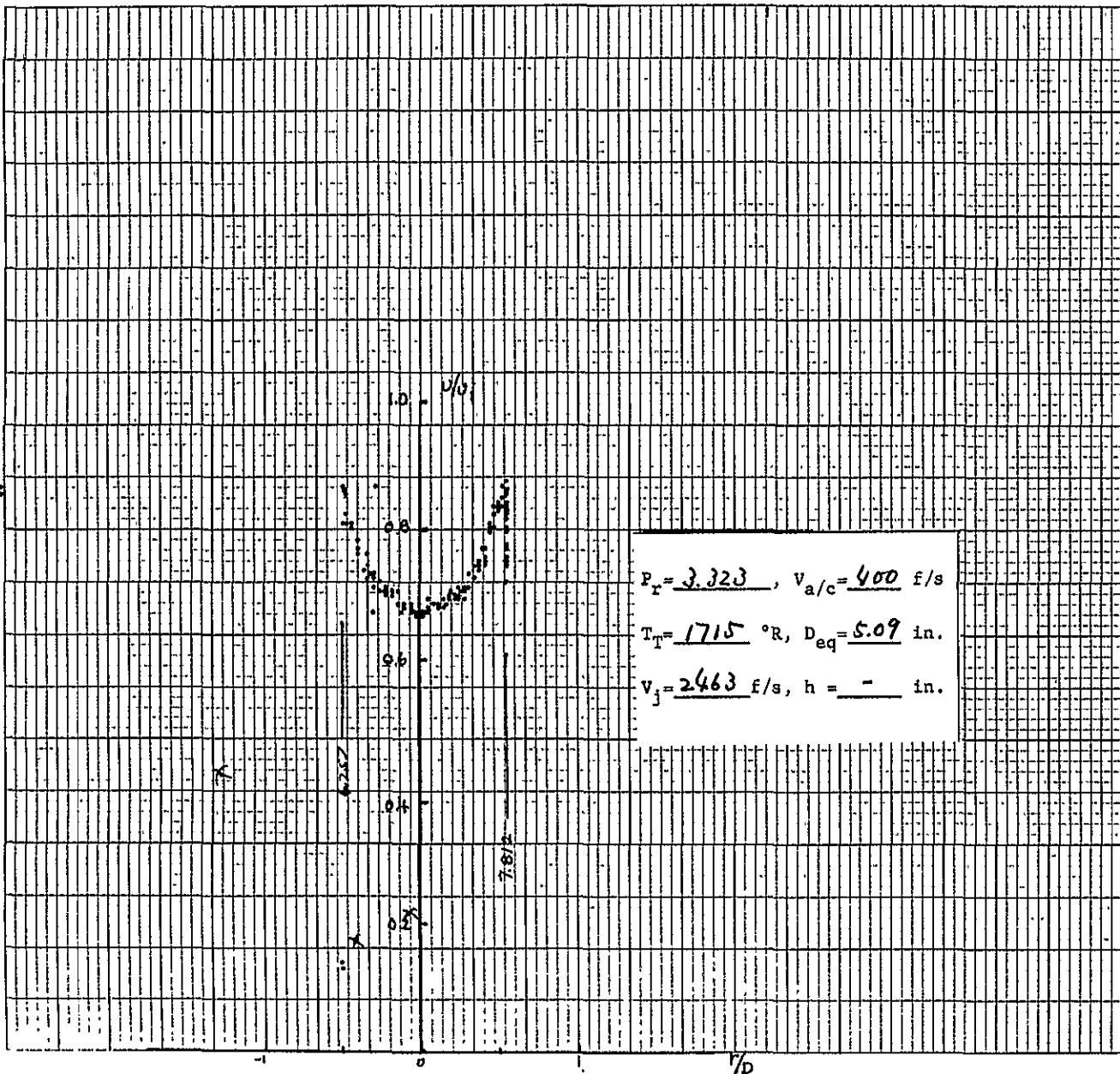
LOCATIONS TRAVERSE - 1.889 VOLTS $D_{eq} = 0.11$

SCALE : X-AXIS= 3.3 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-





$P_r = 3.323$, $V_{a/c} = 400$ f/s
 $T_T = 1715$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2463$ f/s, $h = -$ in.

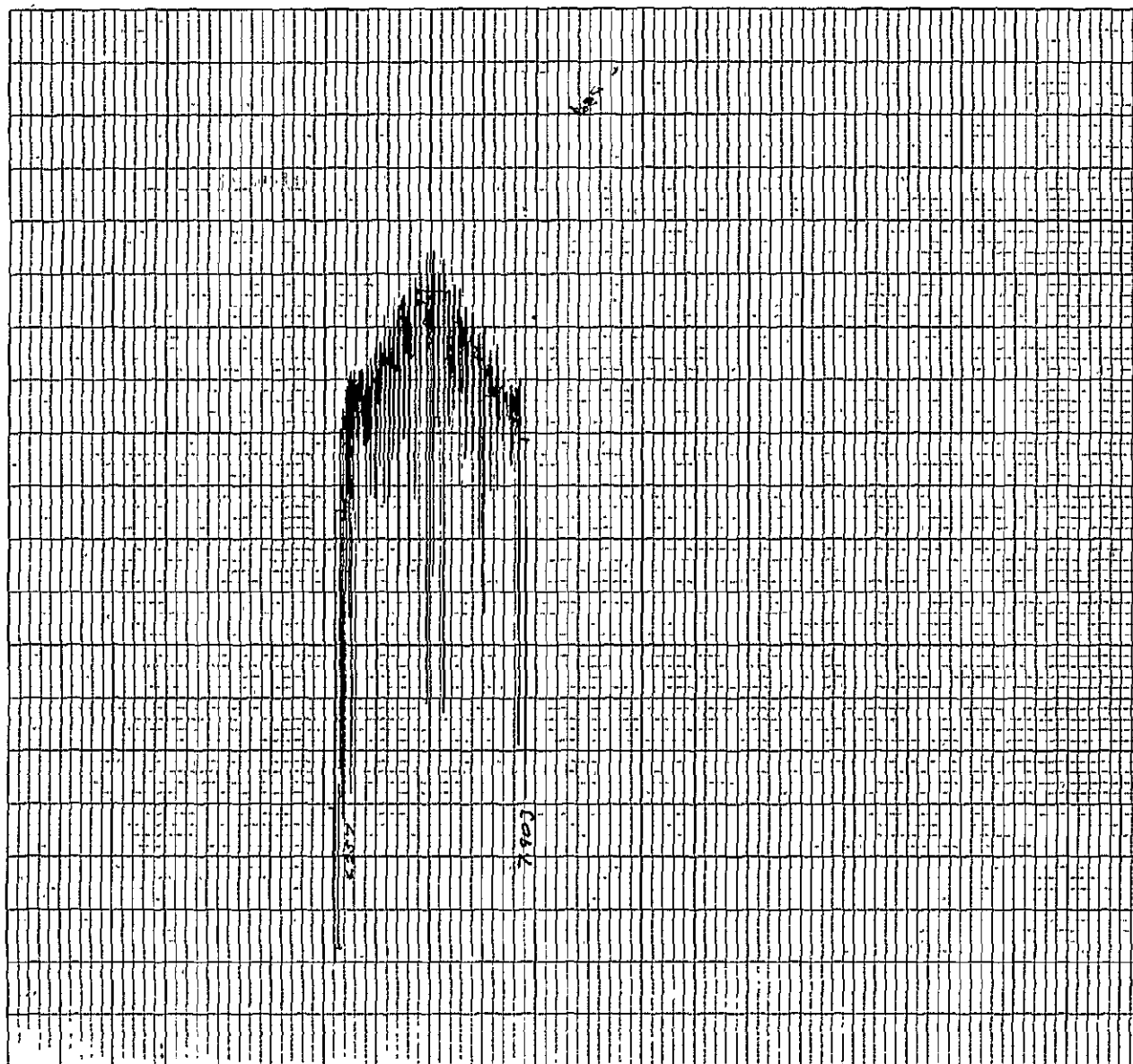
DATE: 3/31/82 NOZZLE: #1
 TEST POINT: L.V. - ; ACOUSTIC - 122
 PLOT IDENTIFICATION: 6-435
 TRAVERSE DETAILS:
 AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - 7.018 VOLTS R_1
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
 AXIAL REF. (ϕ) - 1.881 VOLTS X
 LOCATIONS: TRAVERSE - 1.889 VOLTS Y_{eq}
 SCALE: X-AXIS = 3.33 INCH/UNIT
 Y-AXIS = 375 F.P.S./UNIT
 HISTOGRAMS: H- TO H-



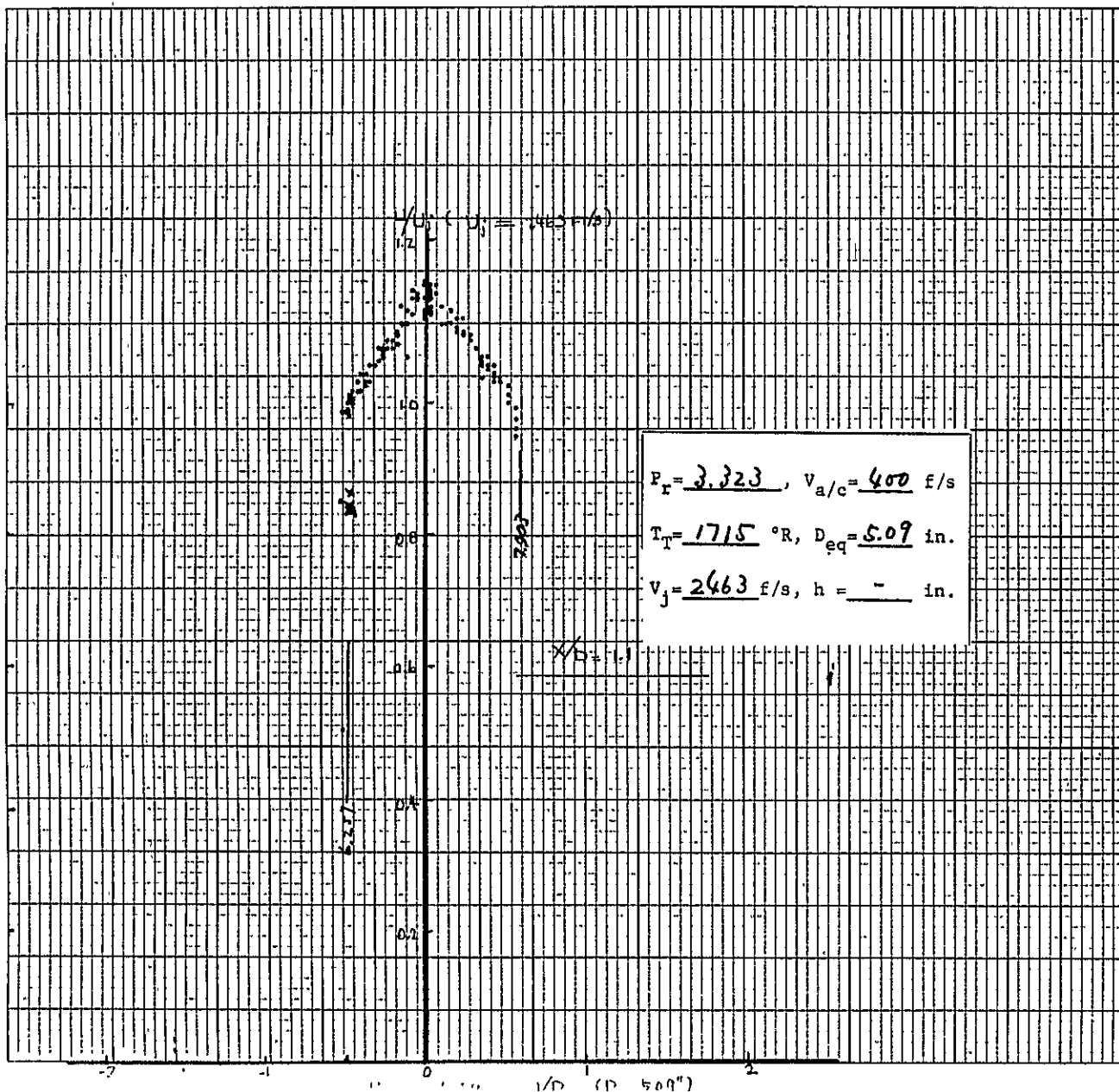
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DATE: 3/31/82	NOZZLE: #1
TEST POINT: L.V. --	ACOUSTIC - 122
PLOT IDENTIFICATION: G-436	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - 7.018 VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - 1.881 VOLTS X	
LOCATIONS: TRAVERSE - 1.960 VOLTS D_{eq}	-11
SCALE : X-AXIS = 3.33	INCH/UNIT
Y-AXIS = 375	F.P.S./UNIT
HISTOGRAMS: H- TO H-	
<p>LINE IN W TRAVERSE</p>	



DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 122.

PLOT IDENTIFICATION : G - 437

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL LOCATIONS: REF. (C) - 7.018 VOLTS $\frac{R}{R_2}$
TRAVERSE - VOLTS

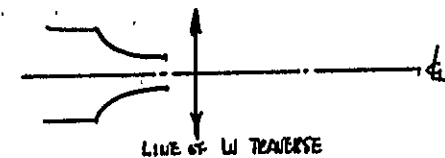
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL: REF. (X=0) -1.881 VOLTS } $\frac{X}{D} = 1.1$
LOCATIONS: TRAVERSE -1.960 VOLTS } D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

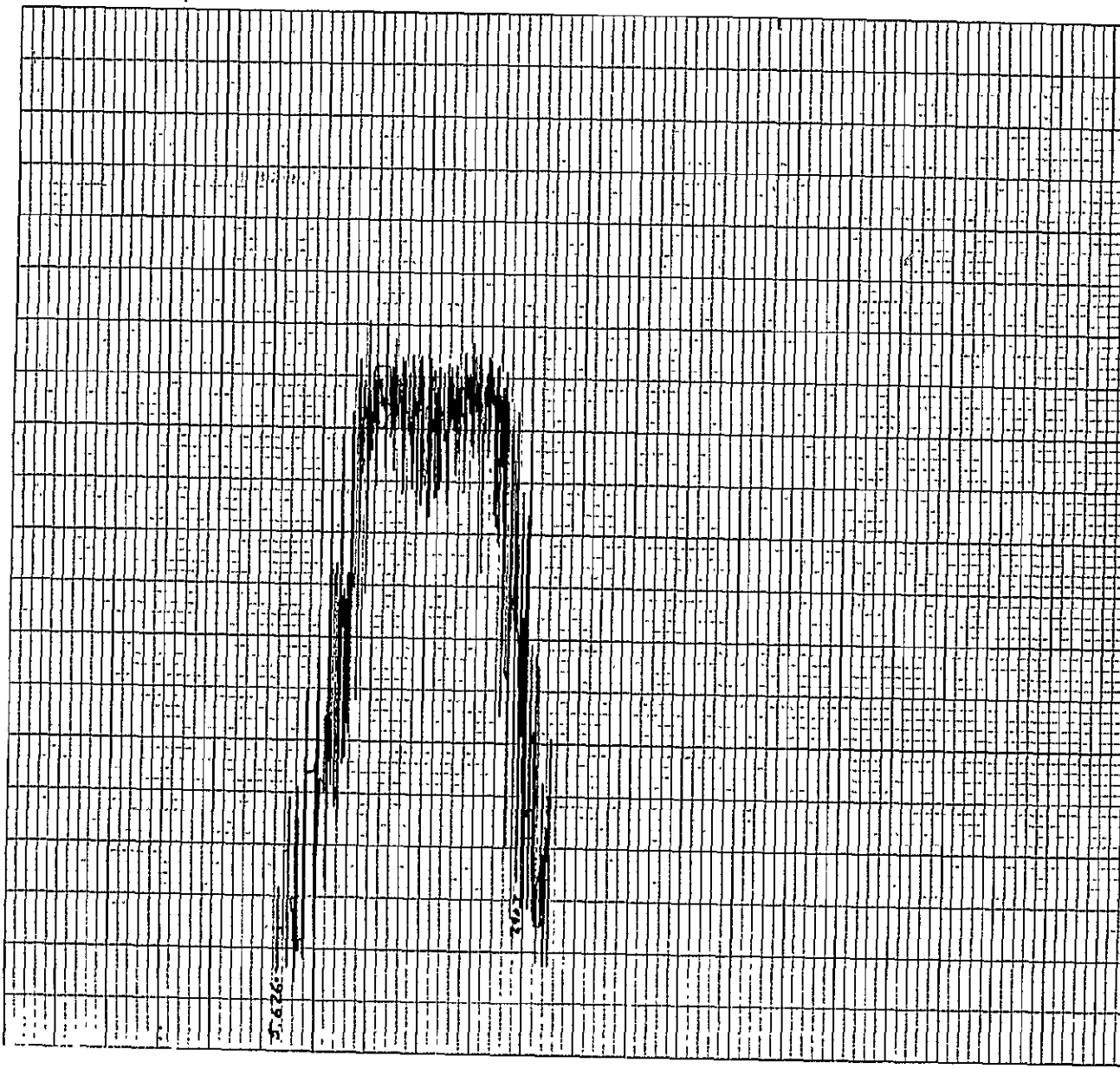
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 122

PLOT IDENTIFICATION: G - 438

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

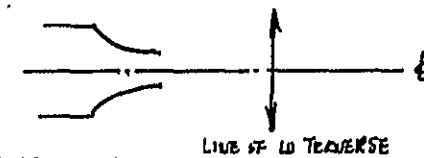
RADIAL REF. (C) - 7.018 VOLTS R_1
LOCATIONS: TRAVERSE VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. (X-0) - 1.881 VOLTS X
LOCATIONS: TRAVERSE - 2.192 VOLTS D_{eq} 4.3

SCALE : X-AXIS= 3.33 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



$$U_j = 2463 \text{ F/s}$$

$$P_T = 3.323, v_{a/c} = 400 \text{ F/s}$$

$$T_T = 1715^\circ \text{R}, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2463 \text{ F/s}, h = - \text{ in.}$$

$$X/D = 4.2$$

DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 122

PLOT IDENTIFICATION: G-439

TRAVERSE DETAILS.

AXIAL ☐ : CL - ☐ ; OFFSET - ☐

RADIAL REF. (CL) - 7.018 VOLTS R_2

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - R ; N.S. - ☐

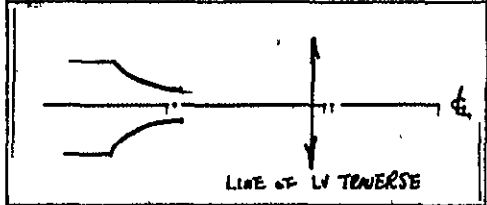
AXIAL REF. (X=0) - 1.881 VOLTS X_{eq}

LOCATIONS: TRAVERSE - 2.192 VOLTS D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-

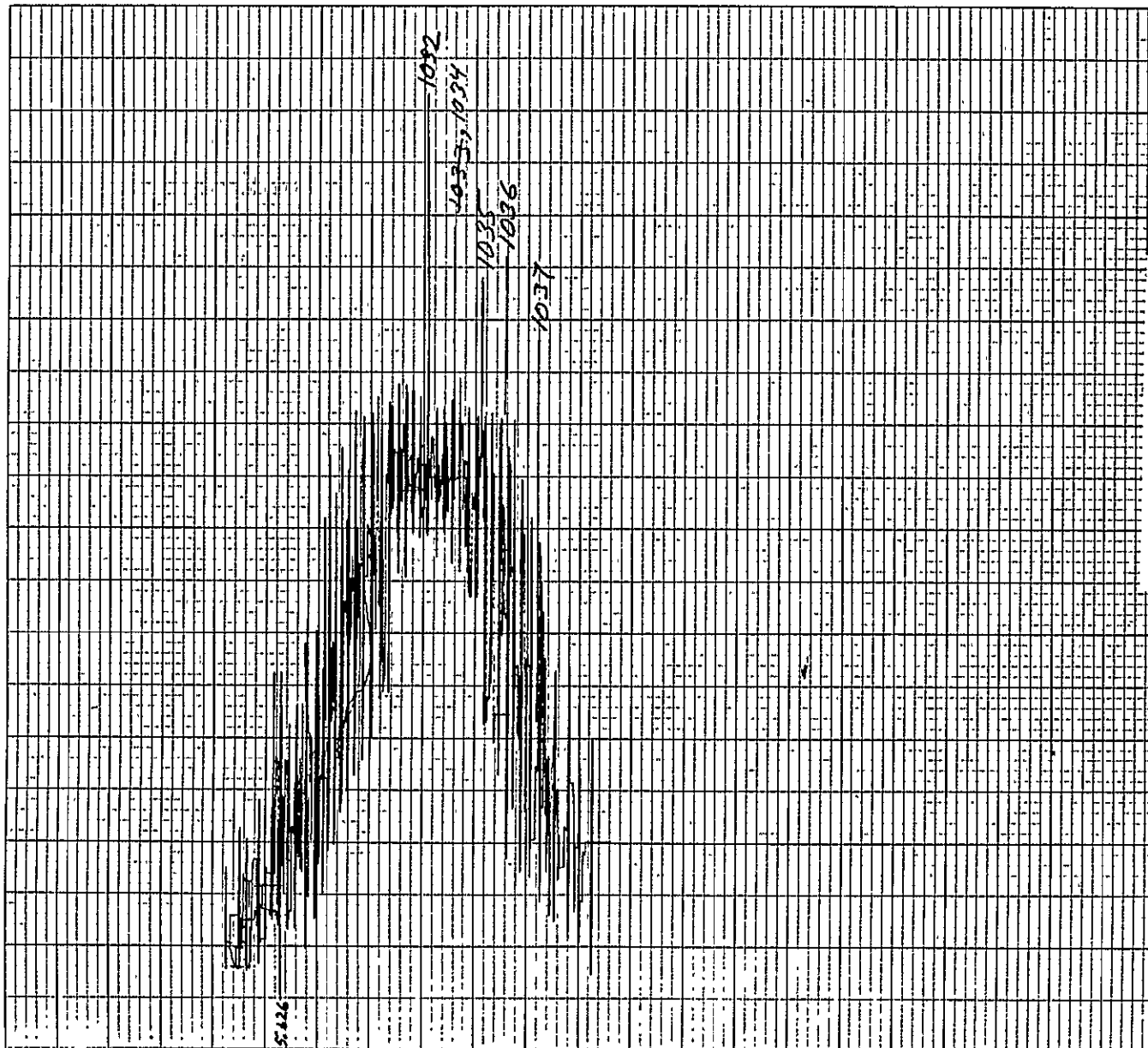


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WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO 45433-3961



DATE: 3/3/82 NOZZLE: #1
TEST POINT: L.V. - ; ACOUSTIC - 122

PLOT IDENTIFICATION: G - 440

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

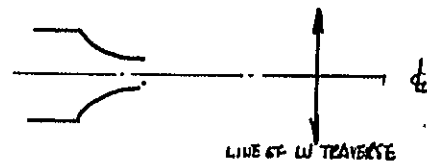
RADIAL REF. (ϕ) - 7018 VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

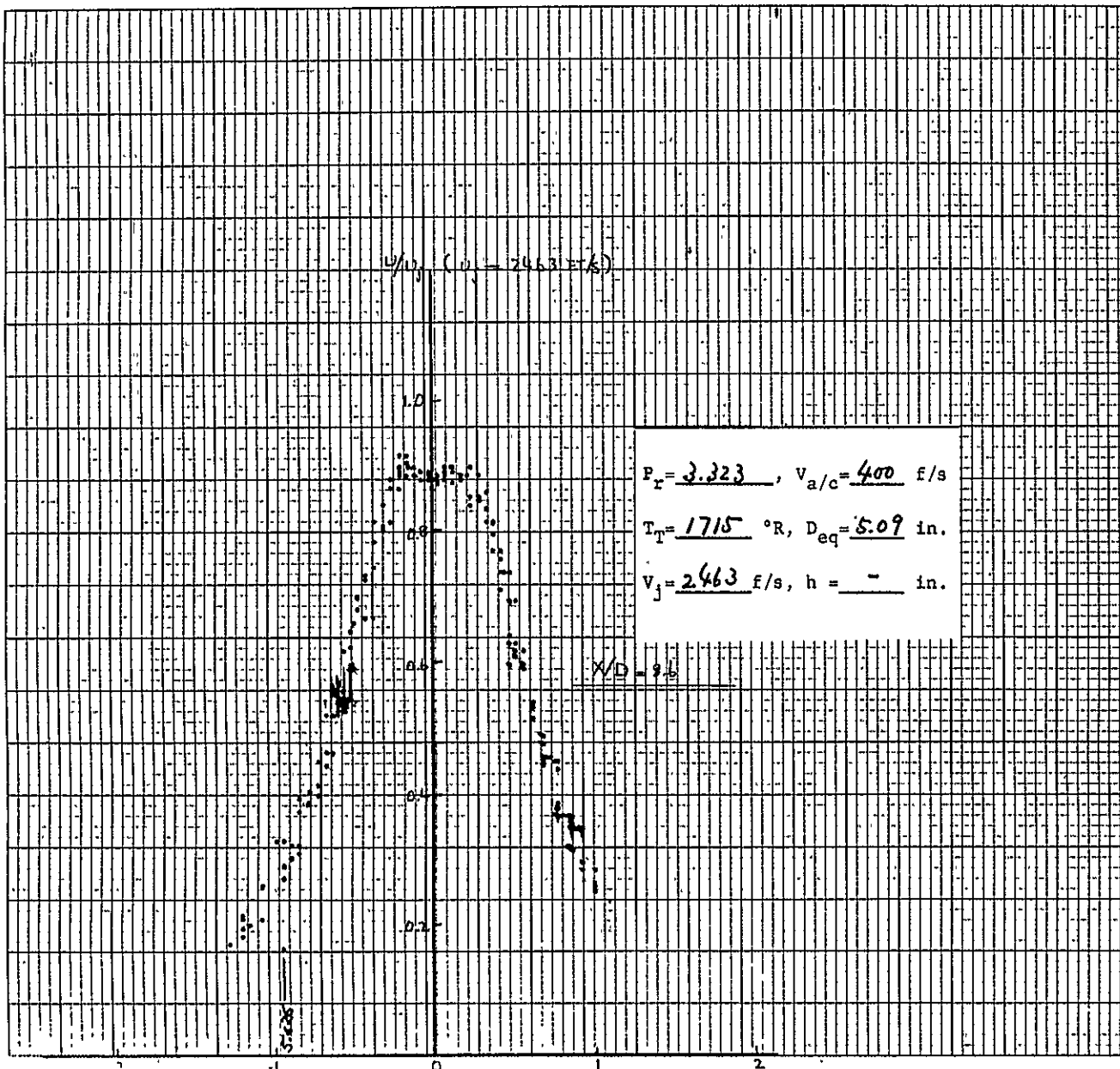
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. (ϕ) - 1887 VOLTS X
LOCATIONS TRAVERSE - 2500 VOLTS D_{eq} = 8.6

SCALE : X-AXIS = 3.33 INCH/UNIT
Y-AXIS = 375 F.P.S./UNIT

HISTOGRAMS: H-1032 TO H-1037





$$P_r = 3.323, V_{a/c} = 400 \text{ f/s}$$

$$T_1 = 1715^\circ \text{R}, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2463 \text{ f/s}, h = \text{---} \text{ in.}$$

DATE: 3/31/81 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 122

PLOT IDENTIFICATION: G - 440 441

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - 7.018 VOLTS $R_1 =$

LOCATIONS: TRAVERSE VOLTS $R_2 =$

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

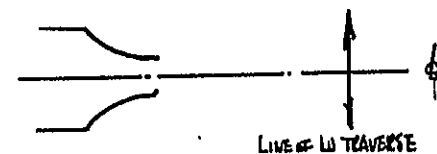
AXIAL REF. (X=0) - 1.881 VOLTS $X/D_{eq} = 8.6$

LOCATIONS: TRAVERSE - 2.500 VOLTS

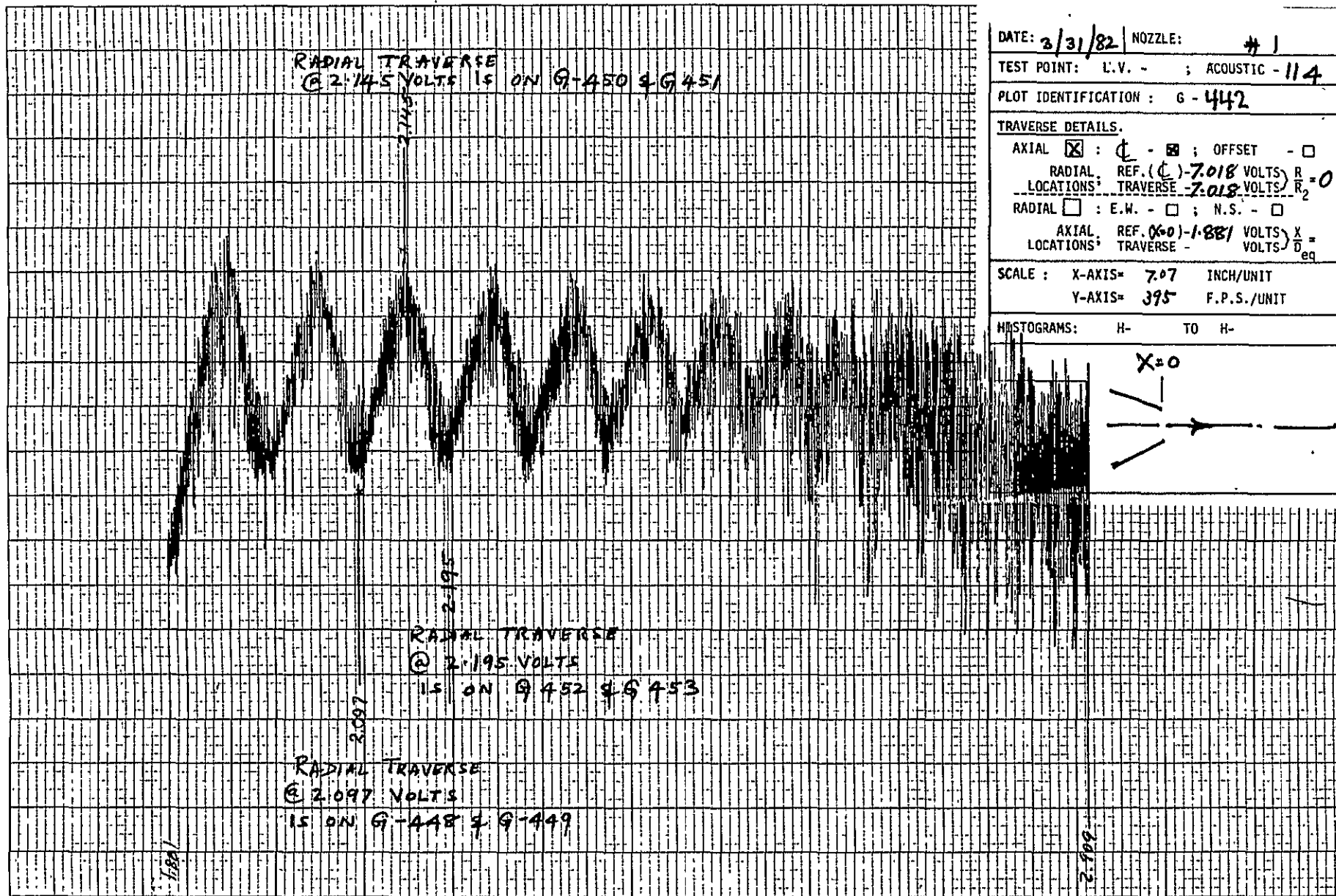
SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



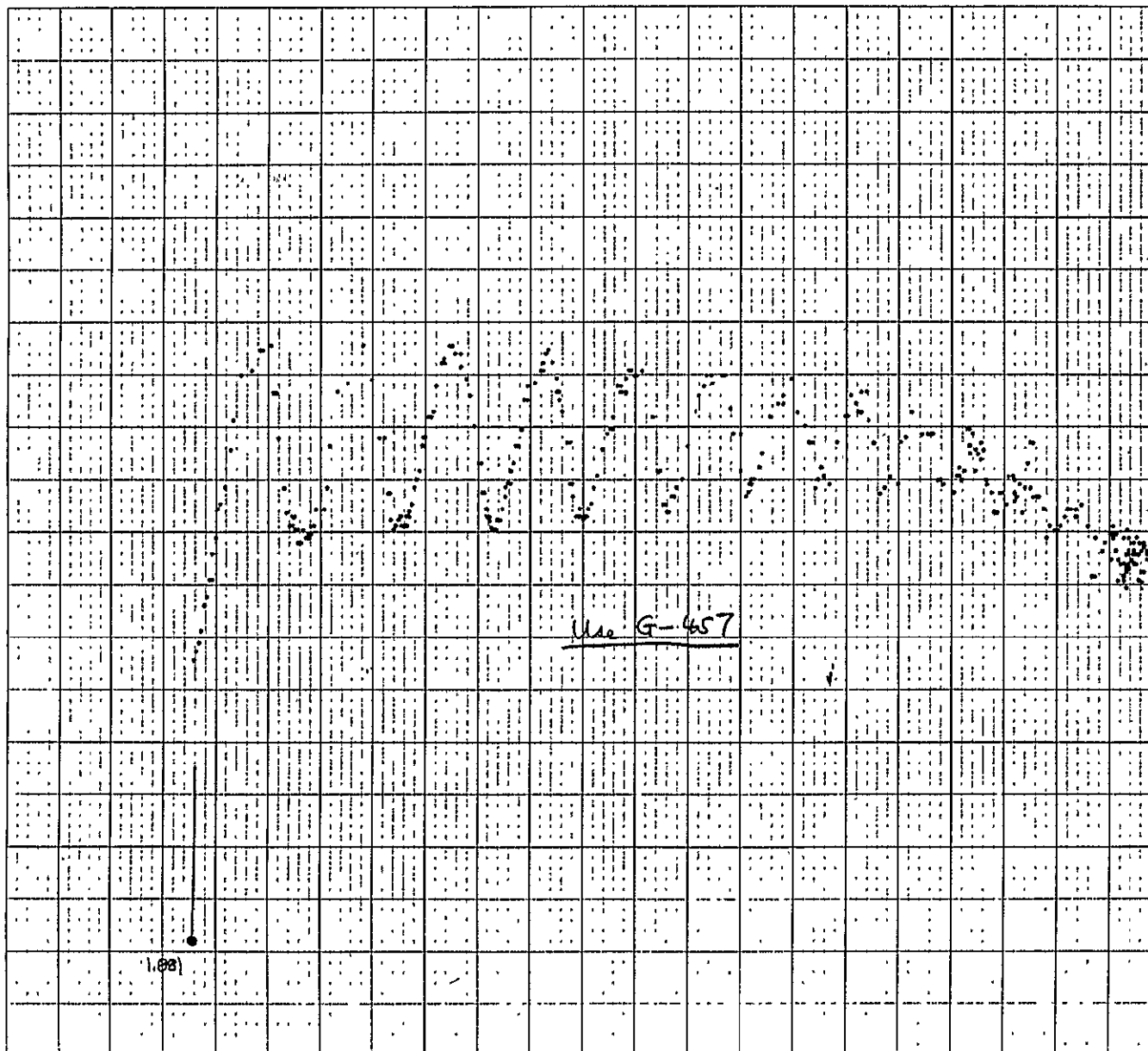
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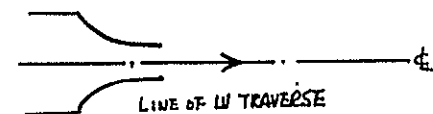
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DATE: 3/31/82 NOZZLE: # 1
TEST POINT: L.V. - ; ACOUSTIC - 114
PLOT IDENTIFICATION: G-443
TRAVERSE DETAILS:
AXIAL ☒ : ϕ - ϕ ; OFFSET - ☐
RADIAL REF. (C) 7018 VOLTS $\frac{R}{R_2} = 0$
LOCATIONS TRAVERSE 7018 VOLTS $\frac{R}{R_2}$
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. (X=0) -1.88 VOLTS $\frac{X}{D_{eq}} =$
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT
HISTOGRAMS: H- TO H-



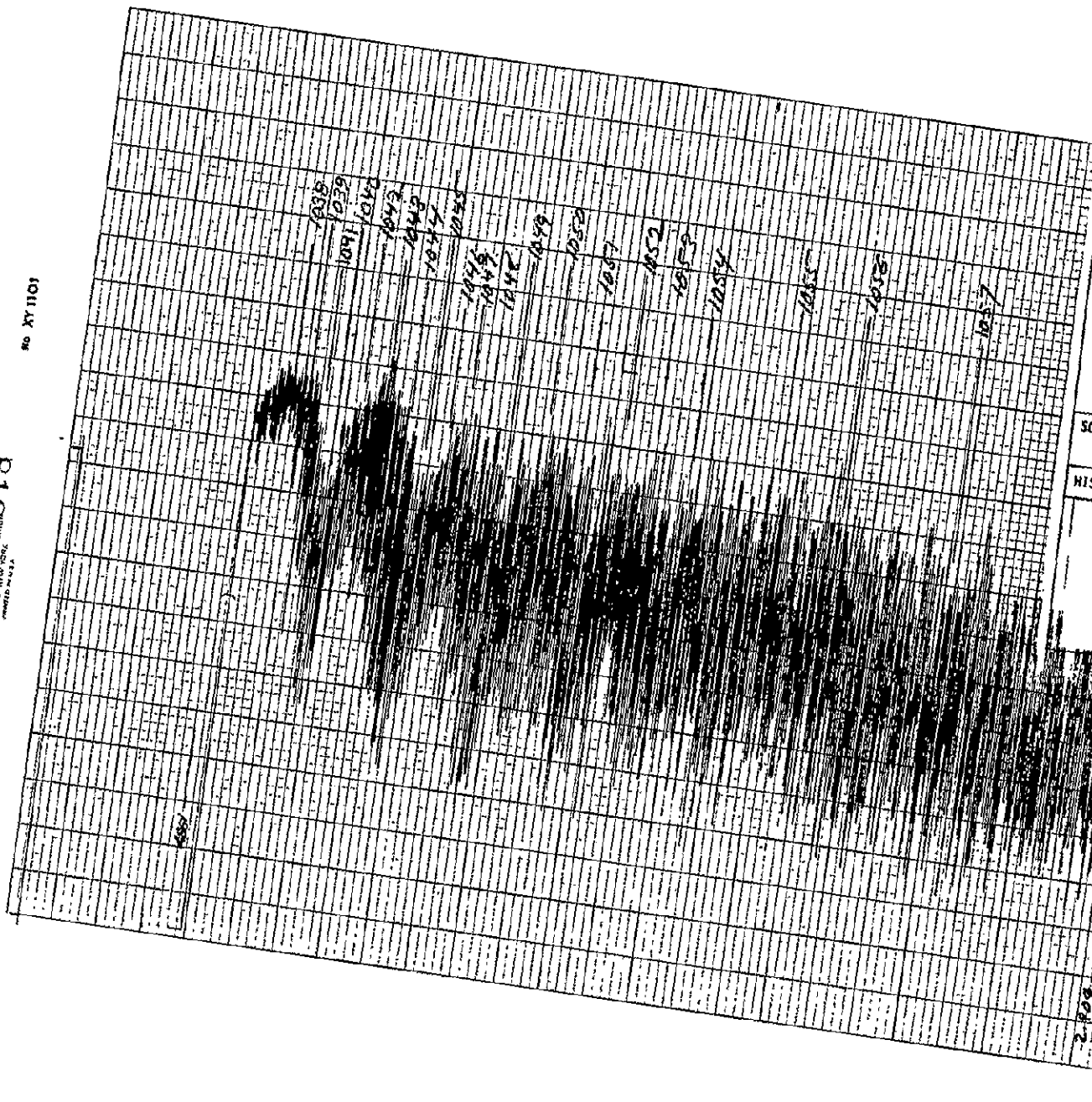
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TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G-4114

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - \square ; OFFSET - 8

RADIAL REF. (C) - 7018 VOLTS $R_1 = 103$

LOCATIONS: TRAVERSE - 7.807 VOLTS R_2

RADIAL ☐ : E.W. - \square ; N.S. - \square

AXIAL REF. (X) - 1.881 VOLTS $X =$

LOCATIONS: TRAVERSE - VOLTS $G =$

SCALE: X-AXIS = 7.07 INCH/UNIT

Y-AXIS = 395 F.P.S./UNIT

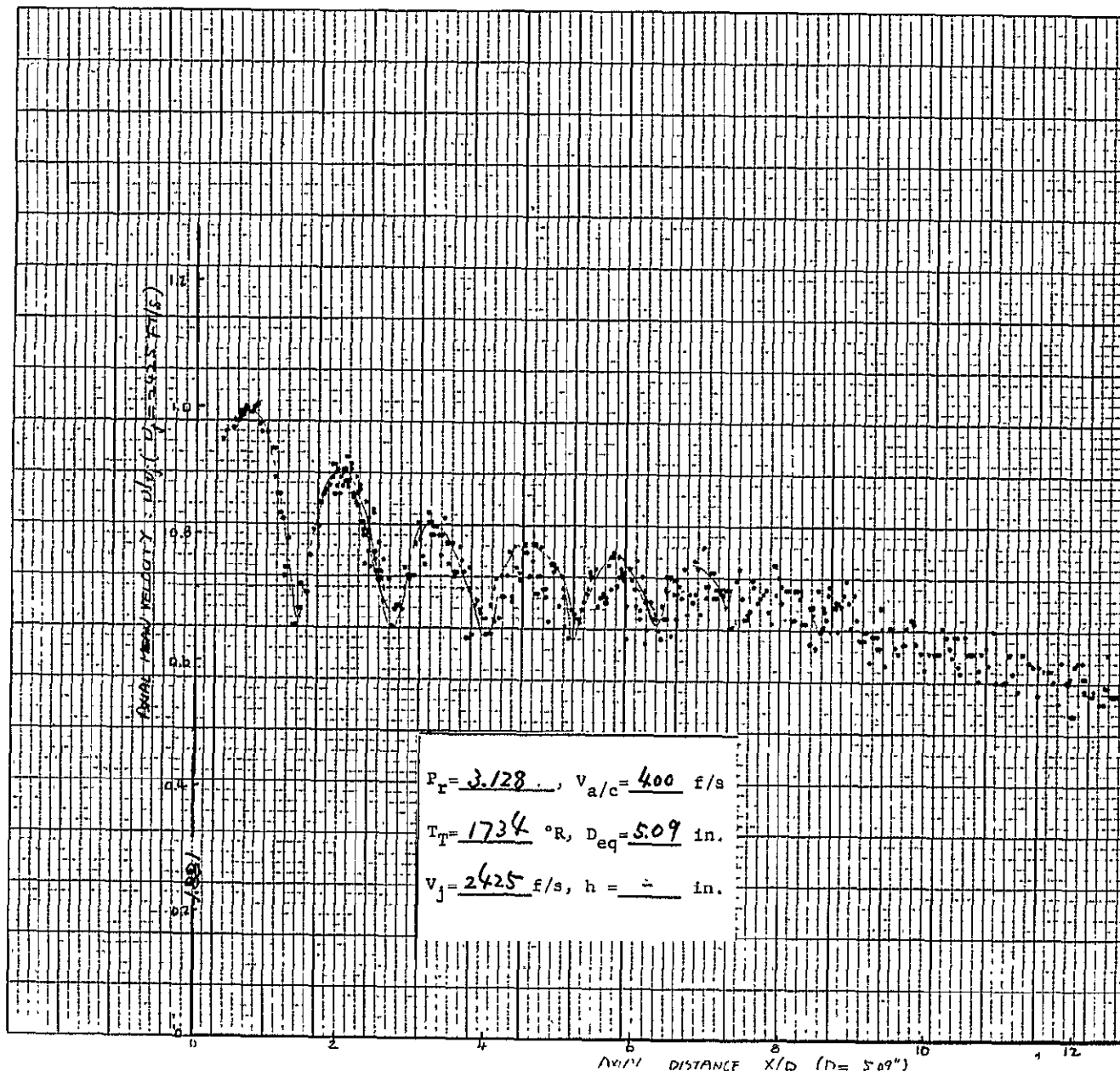
HISTOGRAMS: H-1038 TO H-1057

LINE OF TRAVERSE

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UNITED STATES OF AMERICA

NO XY 1101



DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G-445

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ϕ

RADIAL REF. (ϕ) - 7.018 VOLTS $R_1 = 1.03$

LOCATIONS: TRAVERSE - 7.807 VOLTS R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. ($X=0$) - 1.881 VOLTS X_{eq}

LOCATIONS: TRAVERSE - VOLTS U_{eq}

SCALE : X-AXIS= 7.07 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF W TRAVERSE

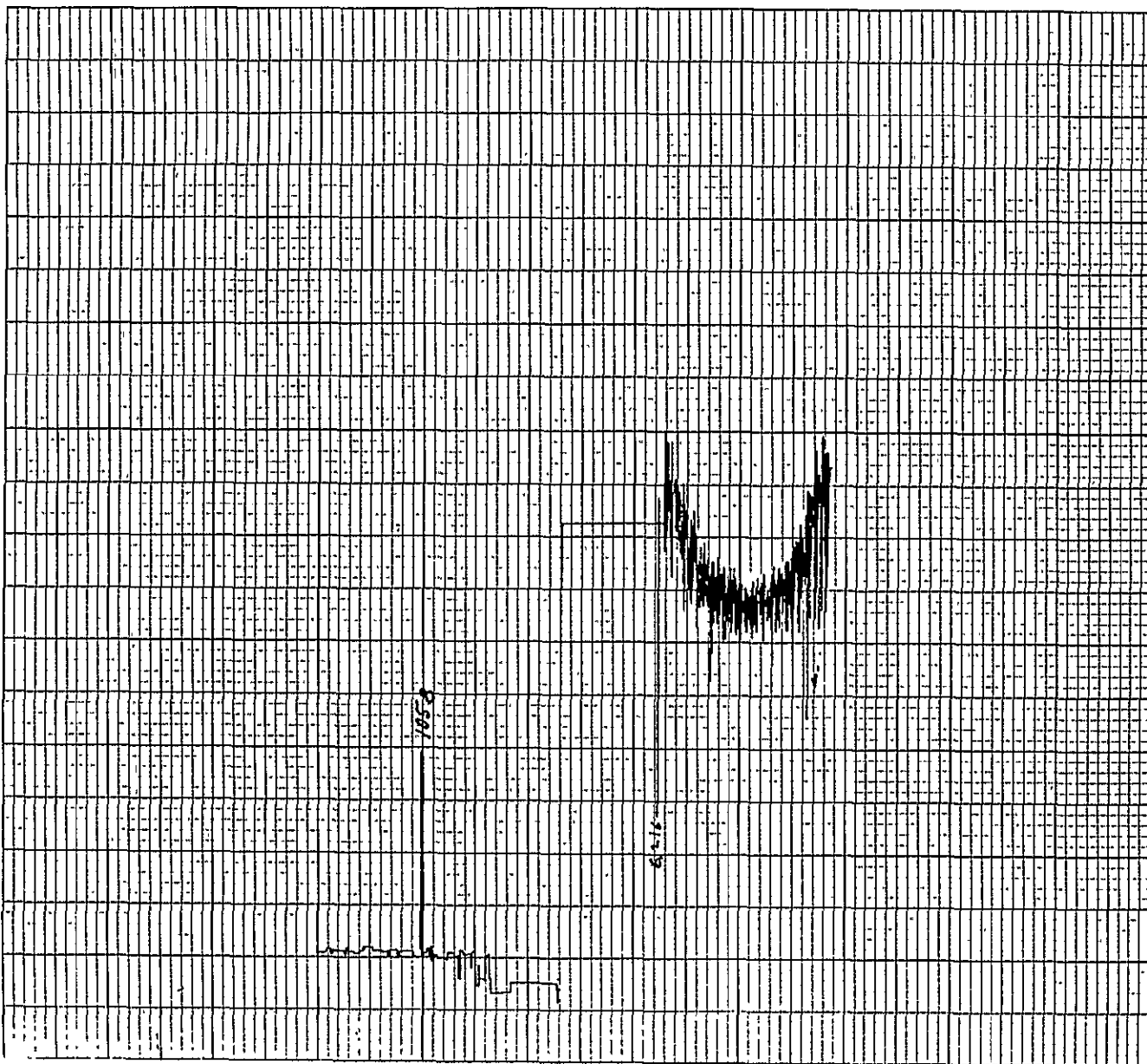
ϕ_1

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NO. 1111



DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION : G - 446

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET ☐

RADIAL REF. (ϕ) - 7.018 VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. ($X=0$) - 1.88 VOLTS X_{eq}

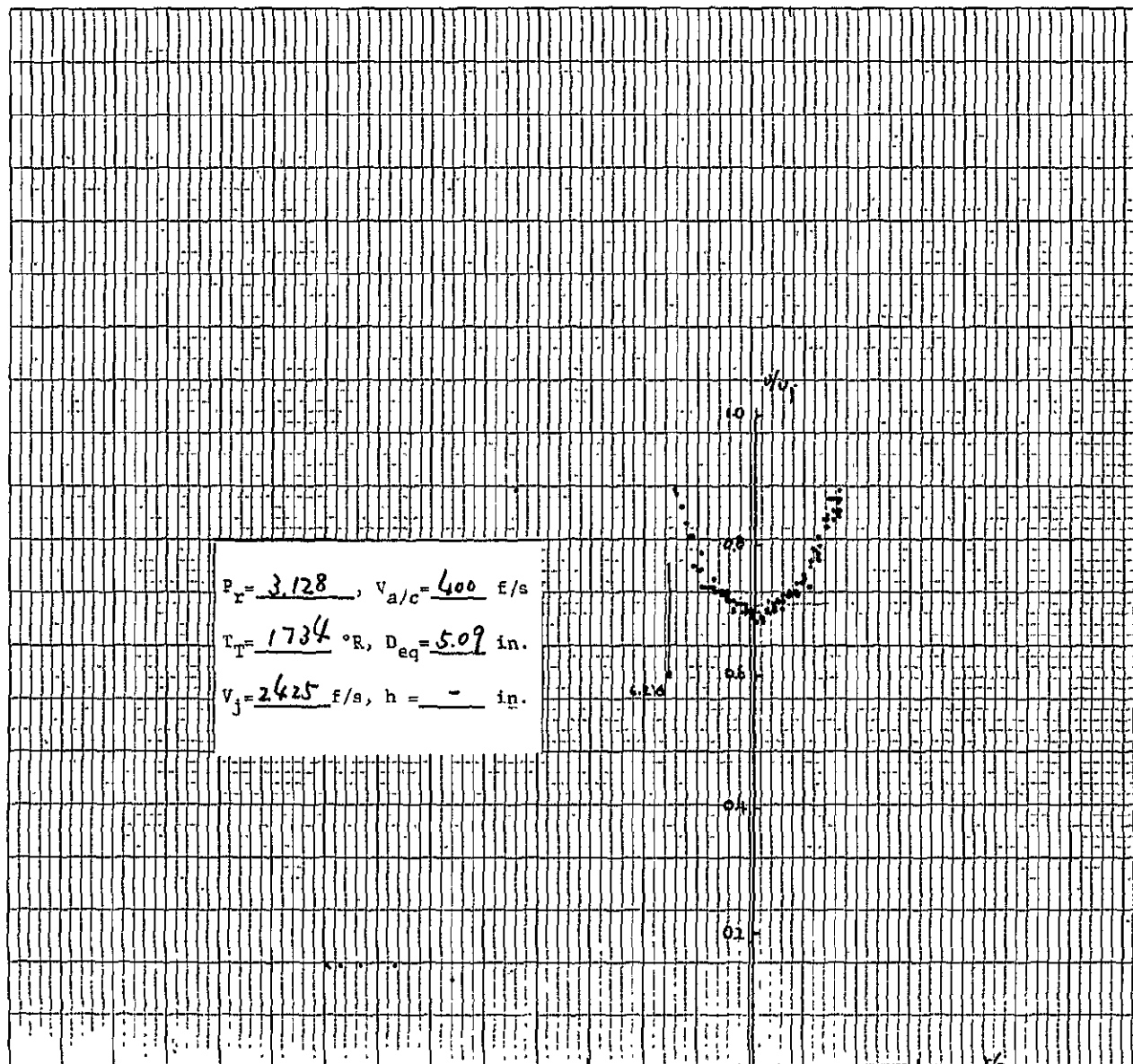
LOCATIONS: TRAVERSE - 1.889 VOLTS D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 375 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE AT W TRAVERSE



$$P_r = 3.128, V_{a/c} = 400 \text{ F/s}$$

$$T_T = 1734^\circ R, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2425 \text{ F/s, } h = - \text{ in.}$$

DATE: 8/3/62 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G-447

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

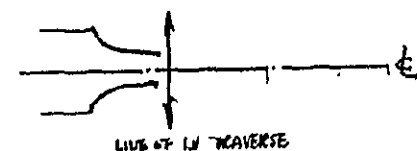
RADIAL REF. (ϕ) - 7.018 VOLTS $R_2 =$
LOCATIONS: TRAVERSE

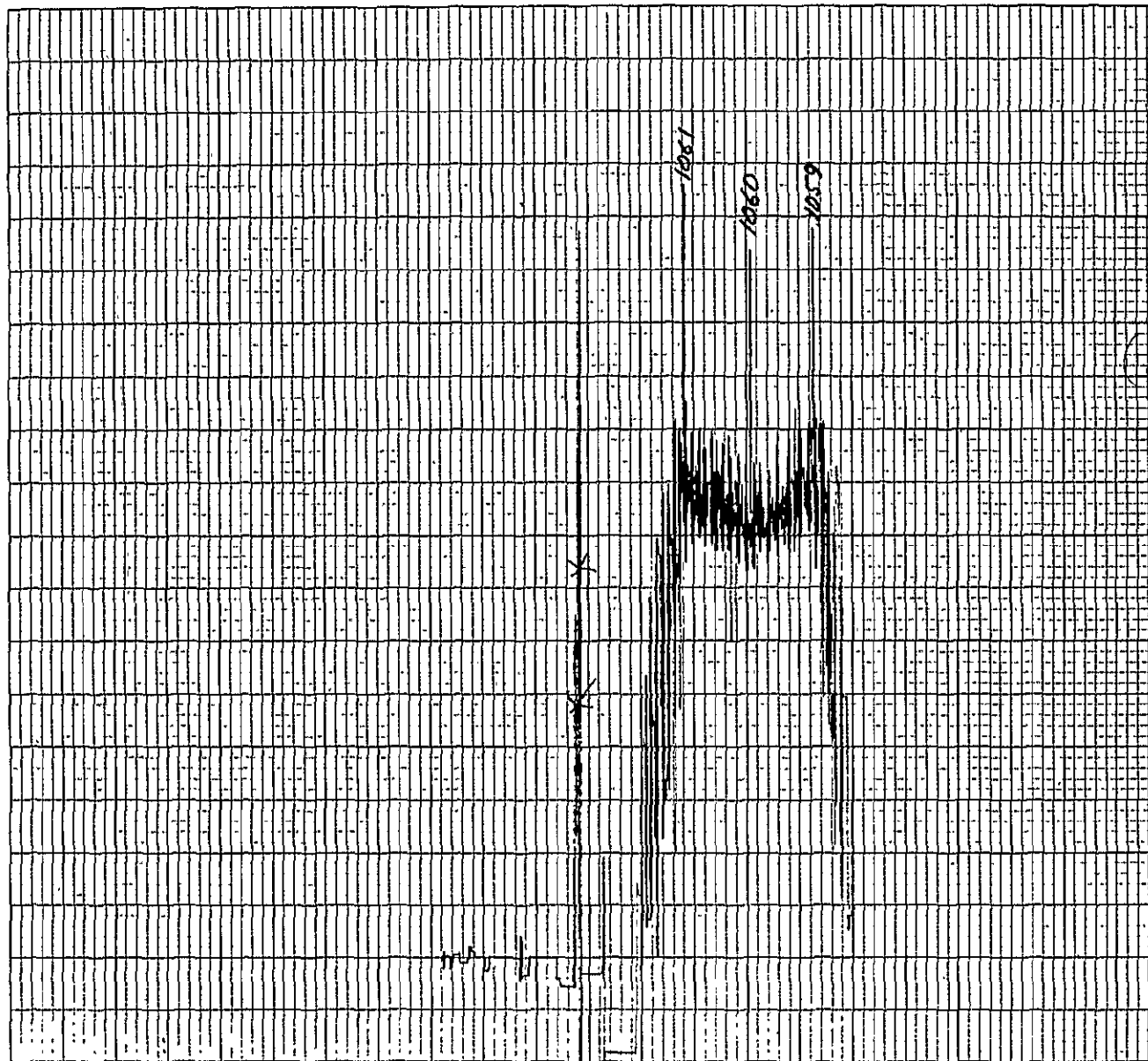
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. ($X=0$) - 1.881 VOLTS $X_{eq} = 0.11$
LOCATIONS: TRAVERSE - 1.889 VOLTS

SCALE: X-AXIS = 3.33 INCH/UNIT
Y-AXIS = 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-





DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G-448

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.M. - ☒ ; N.S. - ☐

AXIAL REF. (X=0) - 1.88 VOLTS X

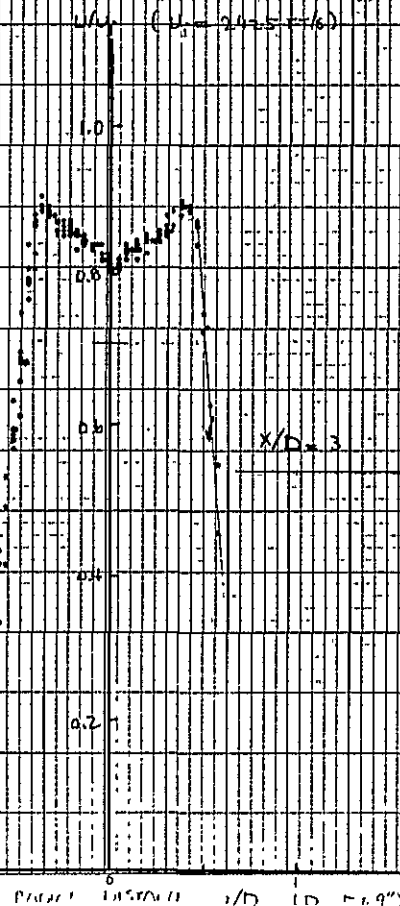
LOCATIONS TRAVERSE - 2.097 VOLTS D_{eq}

SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H-1059 TO H-1061

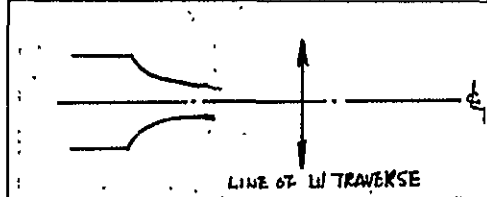
$P_r = 3.128$, $v_{a/c} = 400$ f/s
 $T_r = 1734$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2425$ f/s, $h = -$ in.



DATE: 3/31/82 NOZZLE: #1
 TEST POINT: L.V. - ; ACOUSTIC - 114
 PLOT IDENTIFICATION: G - 449
 TRAVERSE DETAILS:
 AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
 AXIAL REF. (ϕ) - 1.88 VOLTS X
 LOCATIONS: TRAVERSE - 2.097 VOLTS D_{eq}

SCALE : X-AXIS = 3.33 INCH/UNIT
 Y-AXIS = 375 F.P.S./UNIT

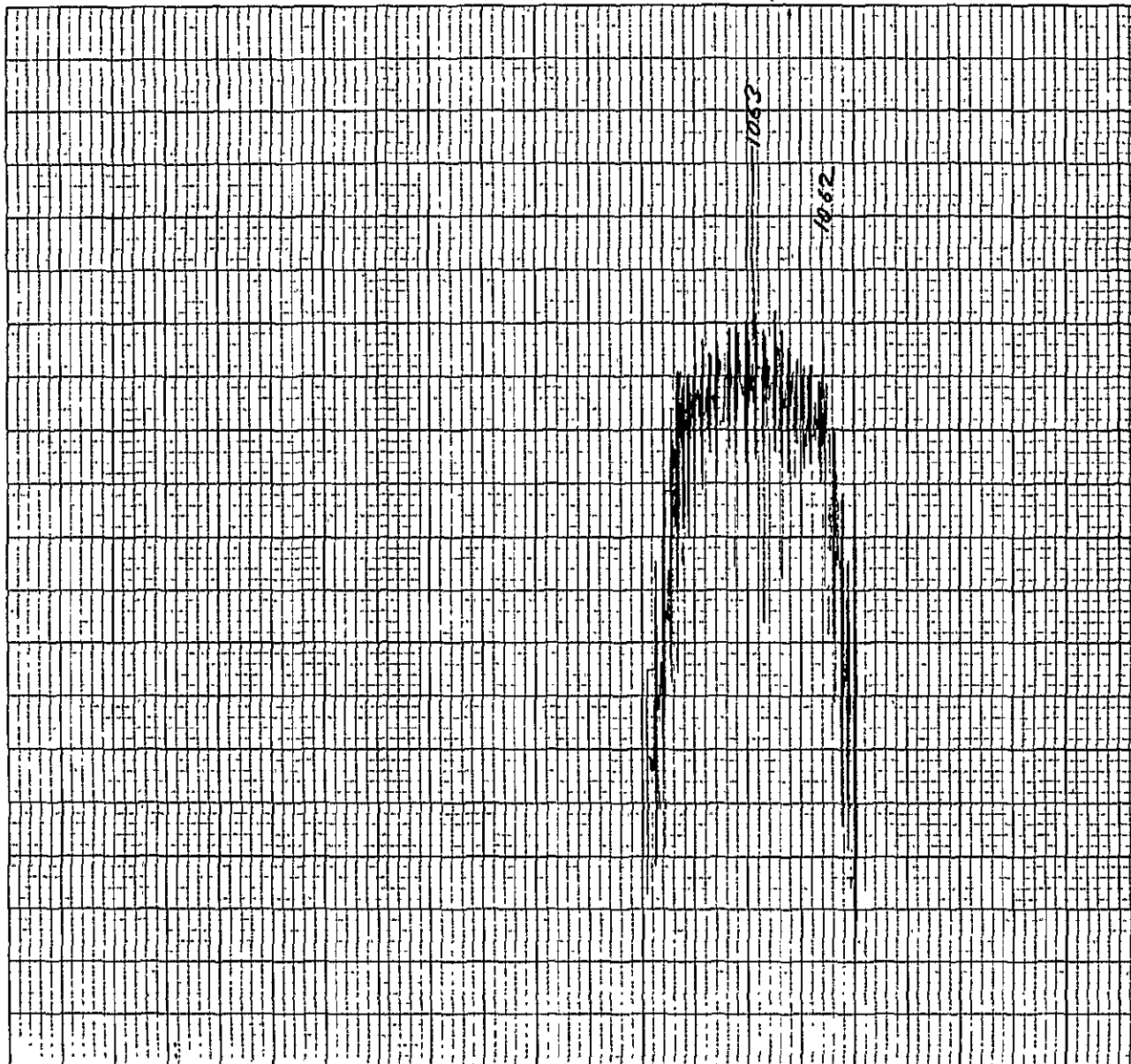
HISTOGRAMS: H- TO H-



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DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G - 450

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS* TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. (X=0) - 1.881 VOLTS $X = 36$

LOCATIONS* TRAVERSE - 2.145 VOLTS D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

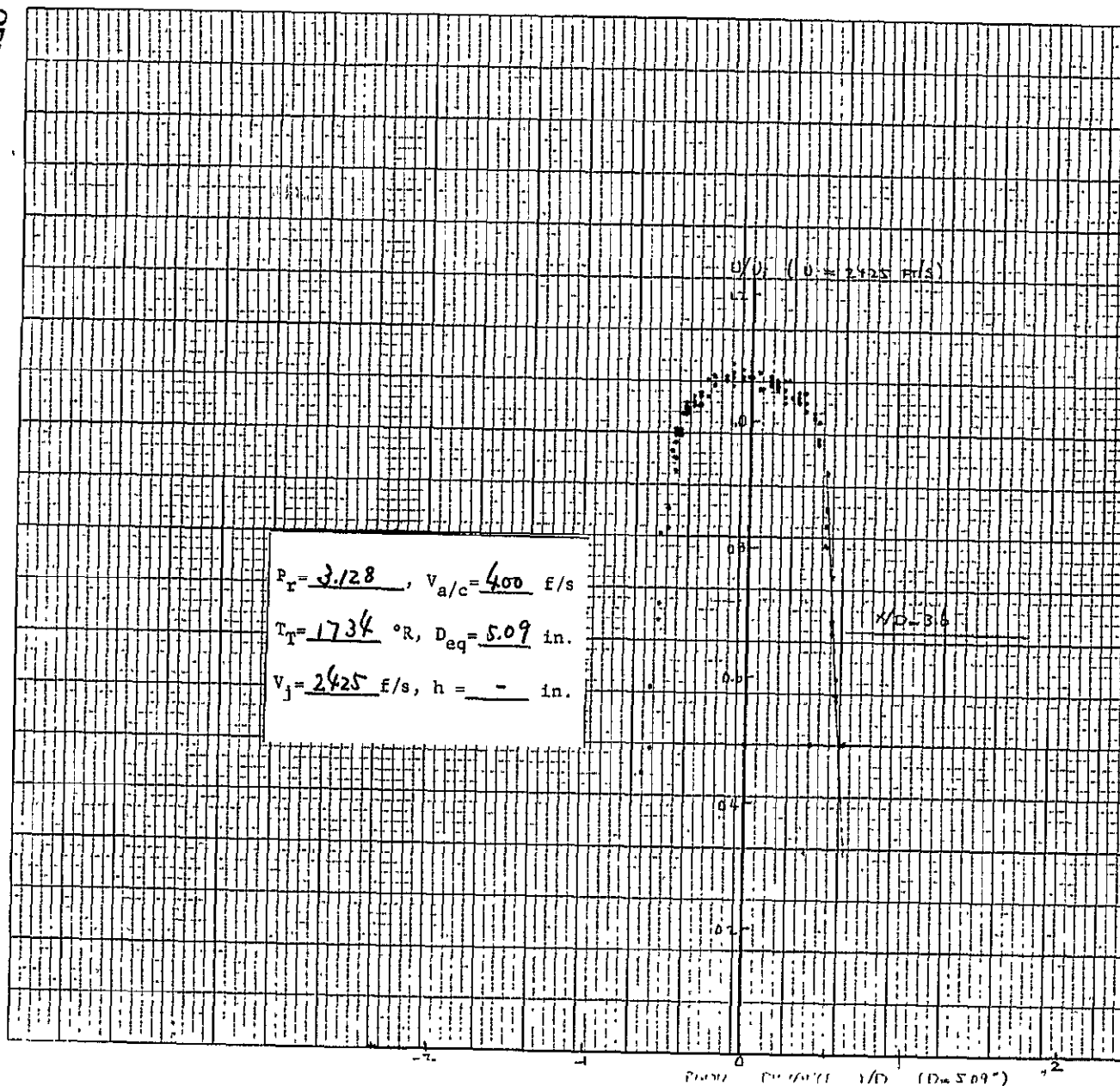
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- 1062 TO H- 1063

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$P_r = 3.128$, $V_{a/c} = 4.00$ E/s
 $T_T = 1734$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2425$ f/s, $h = -$ in.

DATE: 3/31/82 NOZZLE: #1
 TEST POINT: L.V. - ; ACOUSTIC - 114
 PLOT IDENTIFICATION: G-451
 TRAVERSE DETAILS.
 AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
 AXIAL REF. (ϕ) - 1.887 VOLTS X
 LOCATIONS: TRAVERSE - 2.45 VOLTS D_{eq}
 SCALE : X-AXIS = 3.33 INCH/UNIT
 Y-AXIS = 375 F.P.S./UNIT
 HISTOGRAMS: H- TO H-

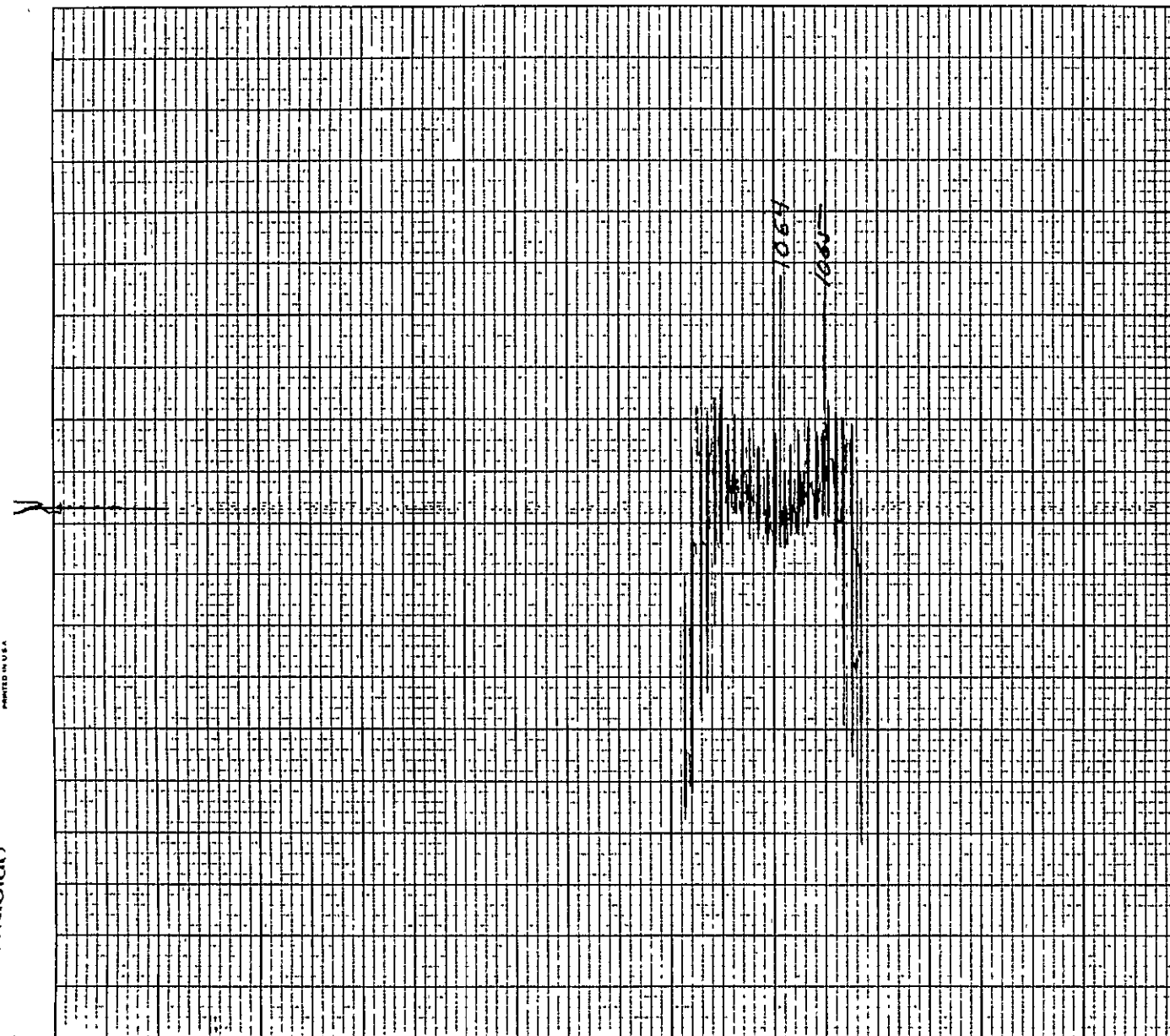
 LINE OF W TRAVERSE

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DATE: 3/3/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G - 452

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_2

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

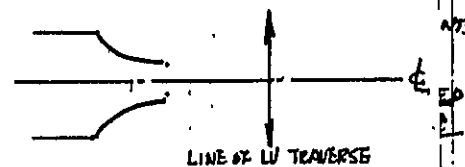
AXIAL REF. (X=0) - 1.80 VOLTS X_{eq}

LOCATIONS TRAVERSE - 2.195 VOLTS D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- 1064 TO H- 1065

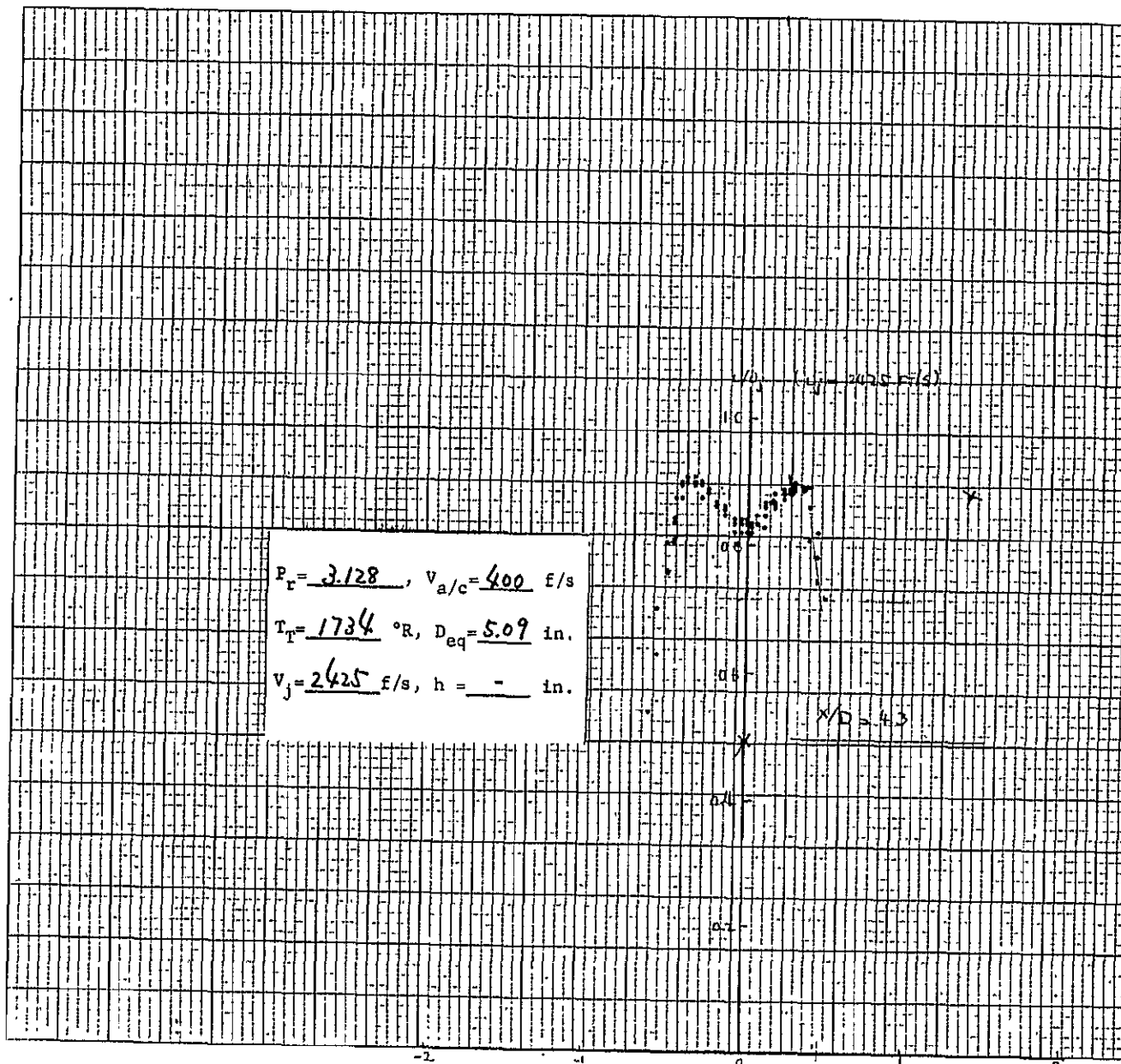


NO. XY 1101

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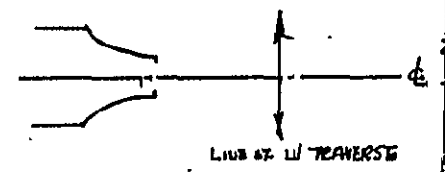
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$P_r = 3.128$, $v_{a/c} = 400$ f/s
 $T_r = 1734$ °R, $D_{eq} = 5.09$ in.
 $v_j = 2425$ f/s, $h = -$ in.

DATE: 3/31/82 NOZZLE: #1
 TEST POINT: L.V. - ; ACOUSTIC - 114
 PLOT IDENTIFICATION: G-453
 TRAVERSE DETAILS.
 AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - ; VOLTS $\frac{R}{R_2}$
 LOCATIONS: TRAVERSE - ; VOLTS $\frac{R}{R_2}$
 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
 AXIAL REF. ($X=0$) - 1.88 VOLTS $\frac{X}{D_{eq}} = 4.3$
 LOCATIONS: TRAVERSE - 2.195 VOLTS $\frac{X}{D_{eq}}$
 SCALE: X-AXIS = 2.33 INCH/UNIT
 Y-AXIS = 395 F.P.S./UNIT
 HISTOGRAMS: H- TO H-



DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G-454

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

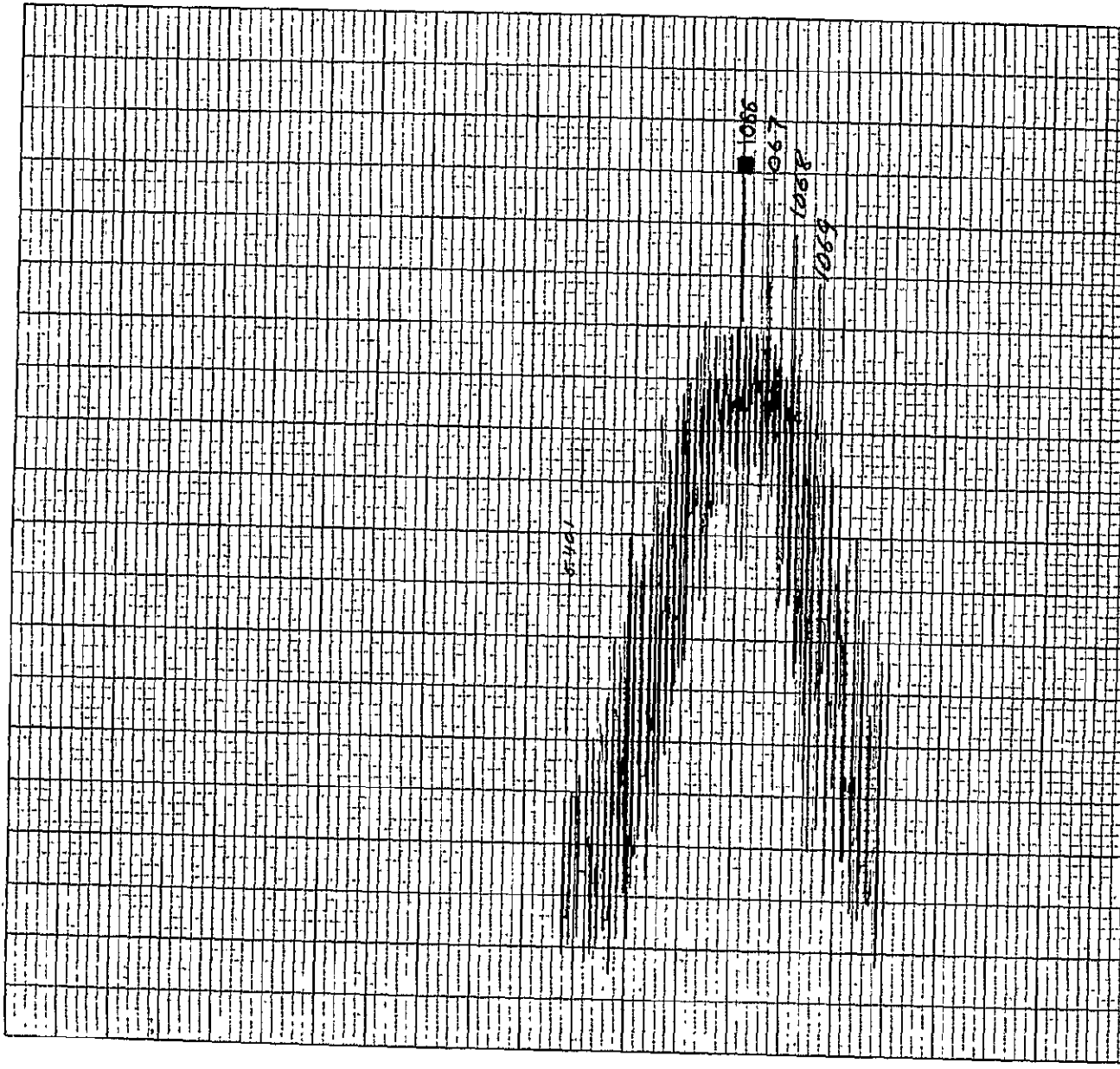
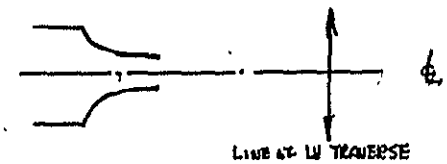
RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq} = 86

SCALE : X-AXIS= 3.33 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- 1066 TO H- 1069



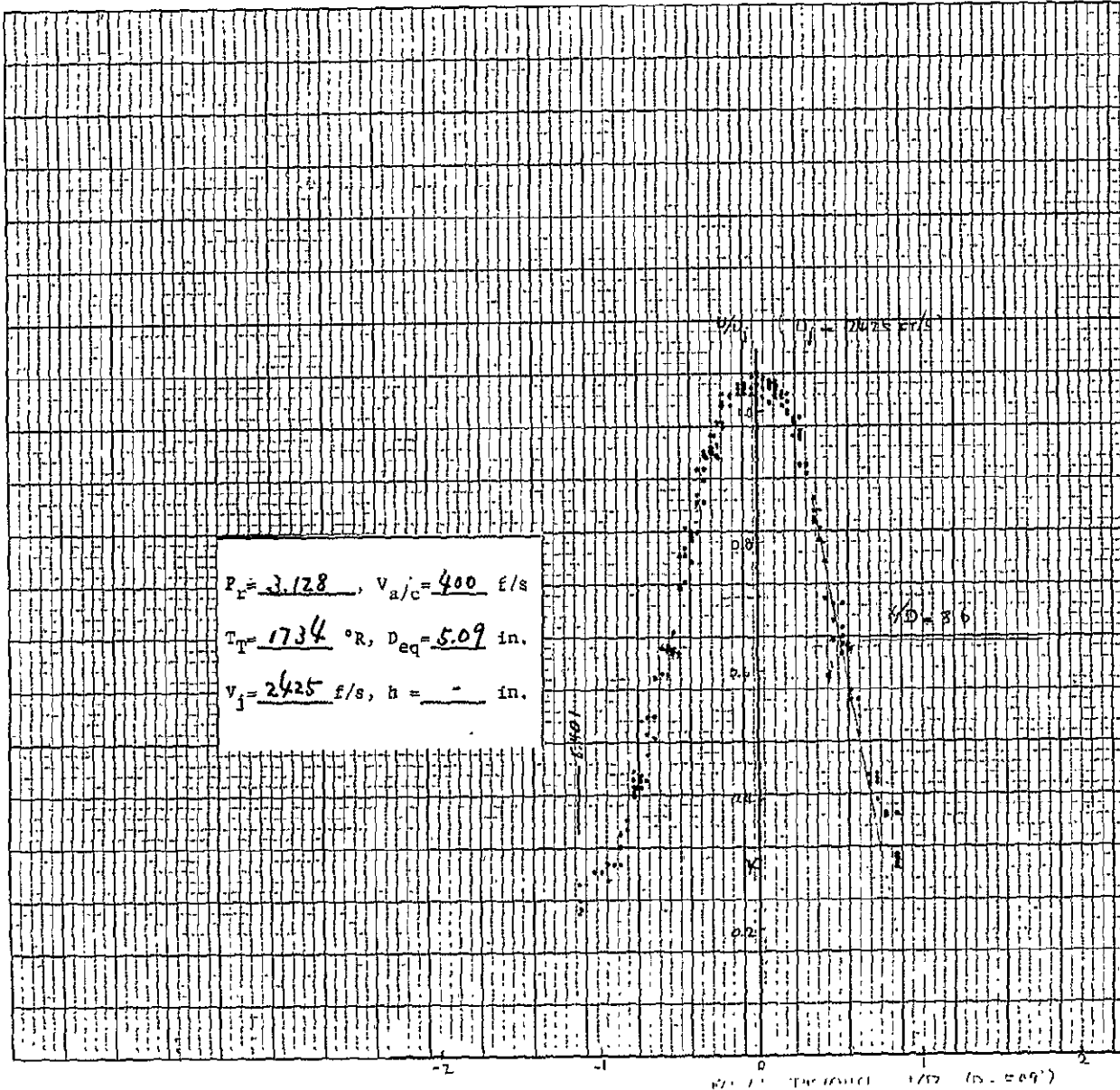
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DATE: 3/31/82 NOZZLE: #1

TEST POINT: L.V. - ; ACOUSTIC - 114

PLOT IDENTIFICATION: G-455

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

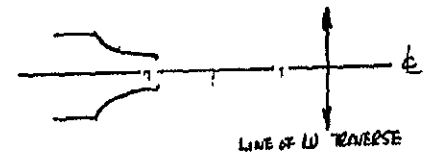
AXIAL REF. ($\phi=0$) - 1.85 VOLTS X $D = 86$

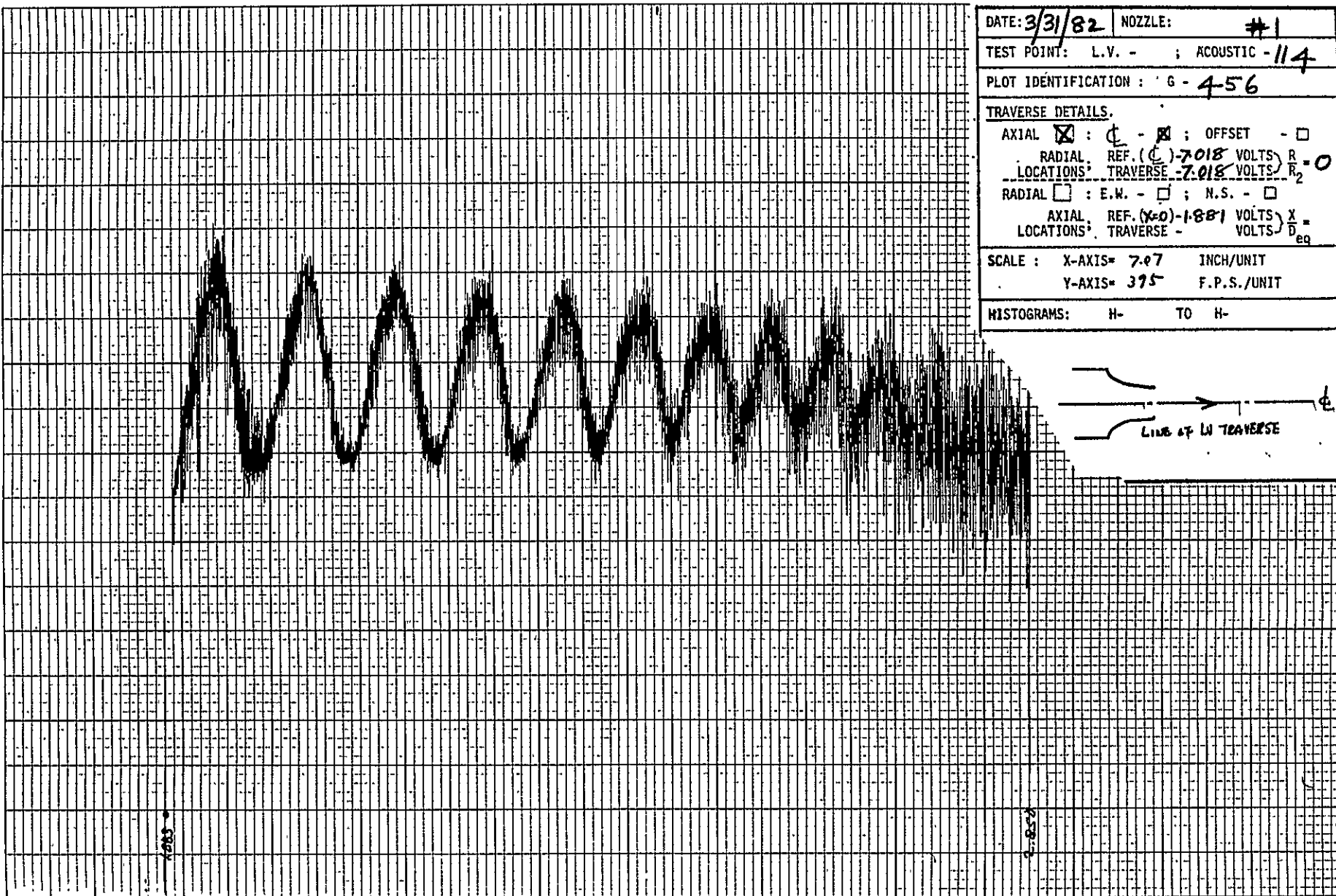
LOCATIONS: TRAVERSE - 2.500 VOLTS D_{eq}

SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



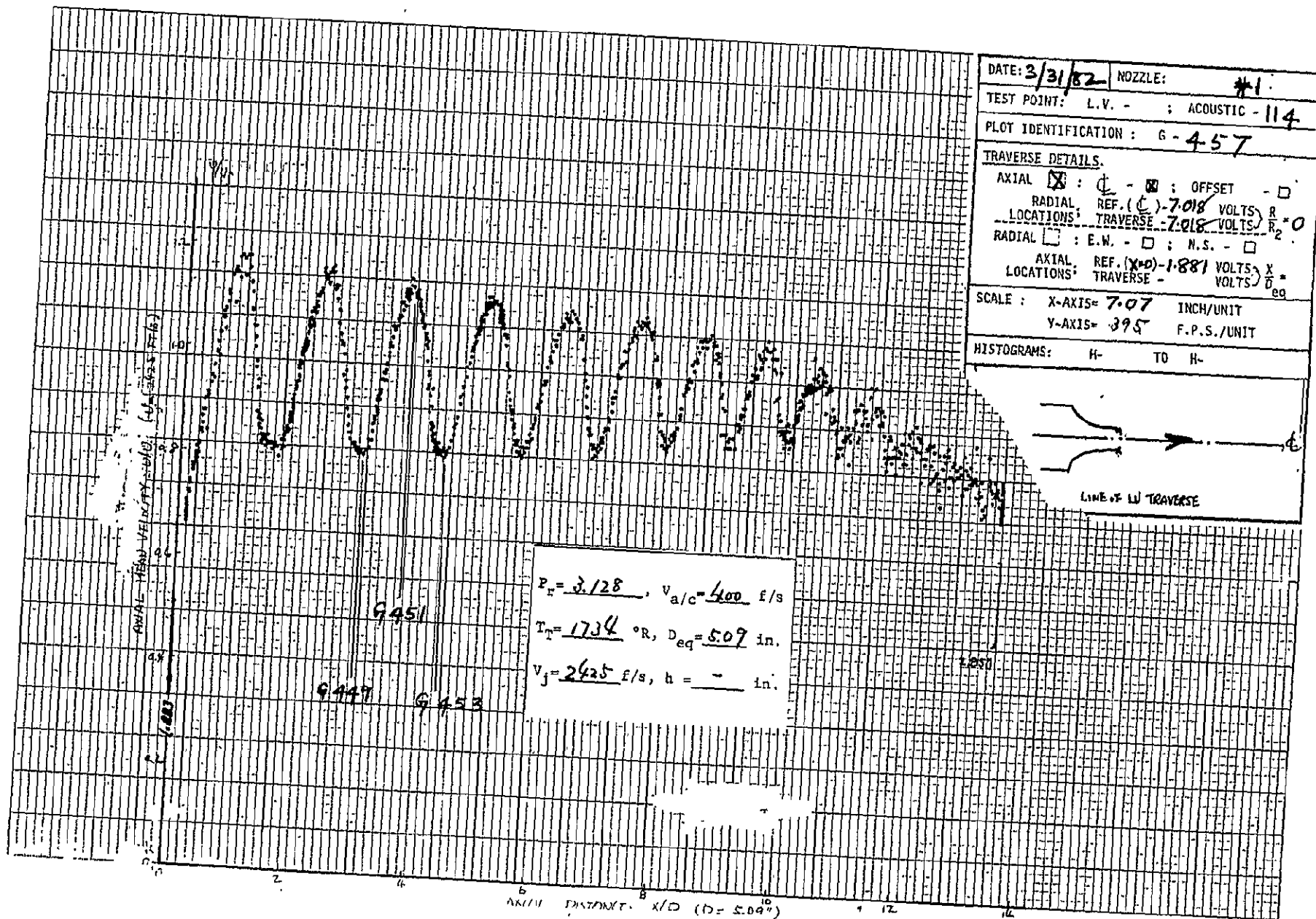


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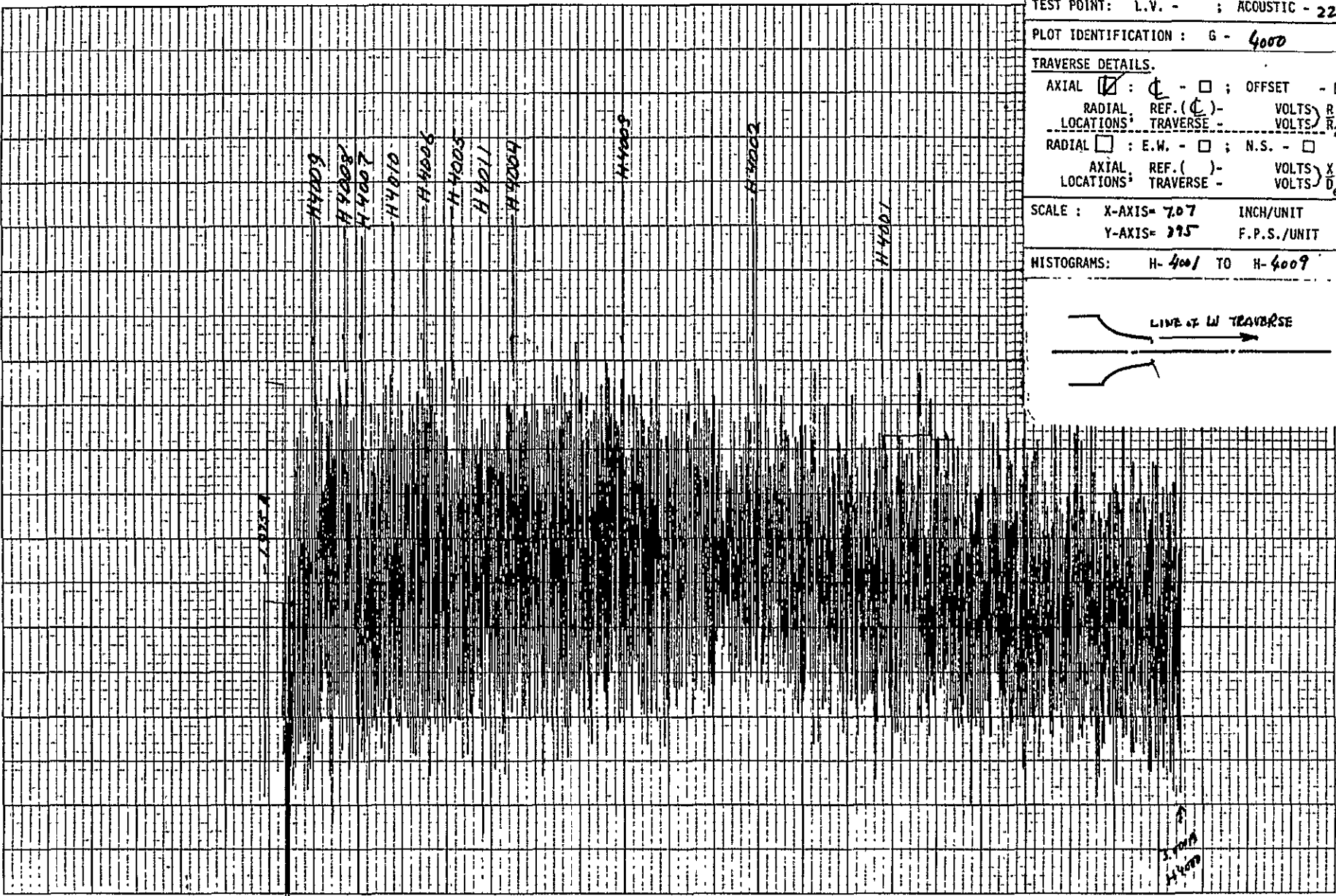
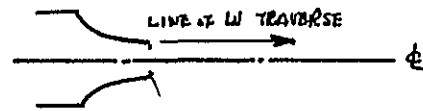
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DATE: 4/7/72	NOZZLE: # 2
TEST POINT: L.V. - ; ACOUSTIC - 221	
PLOT IDENTIFICATION: G - 4000	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 295 F.P.S./UNIT	
HISTOGRAMS: H-4001 TO H-4009	



DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

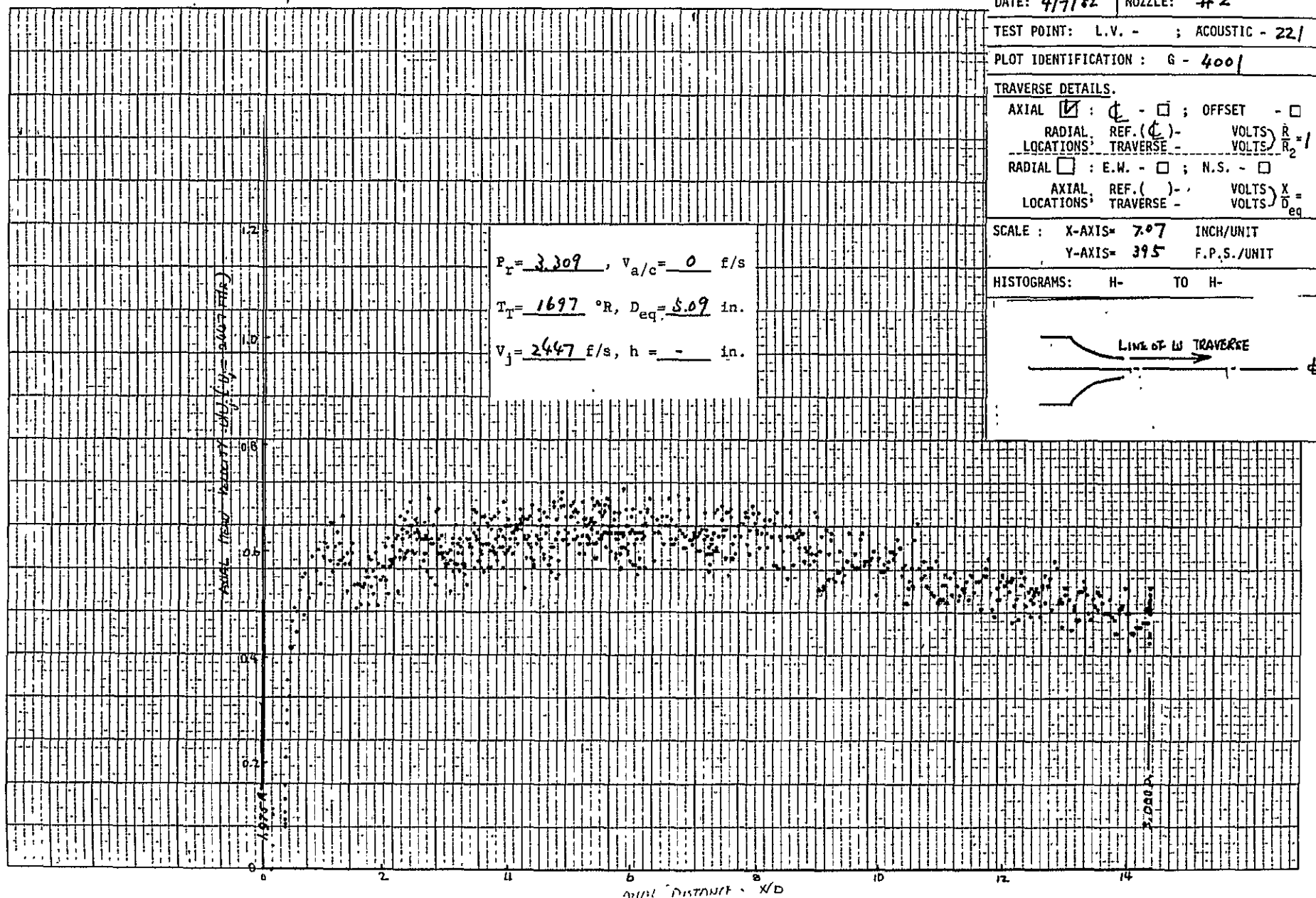
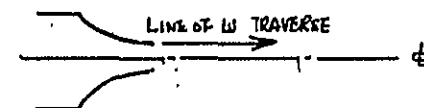
PLOT IDENTIFICATION : G - 4001

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 7/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

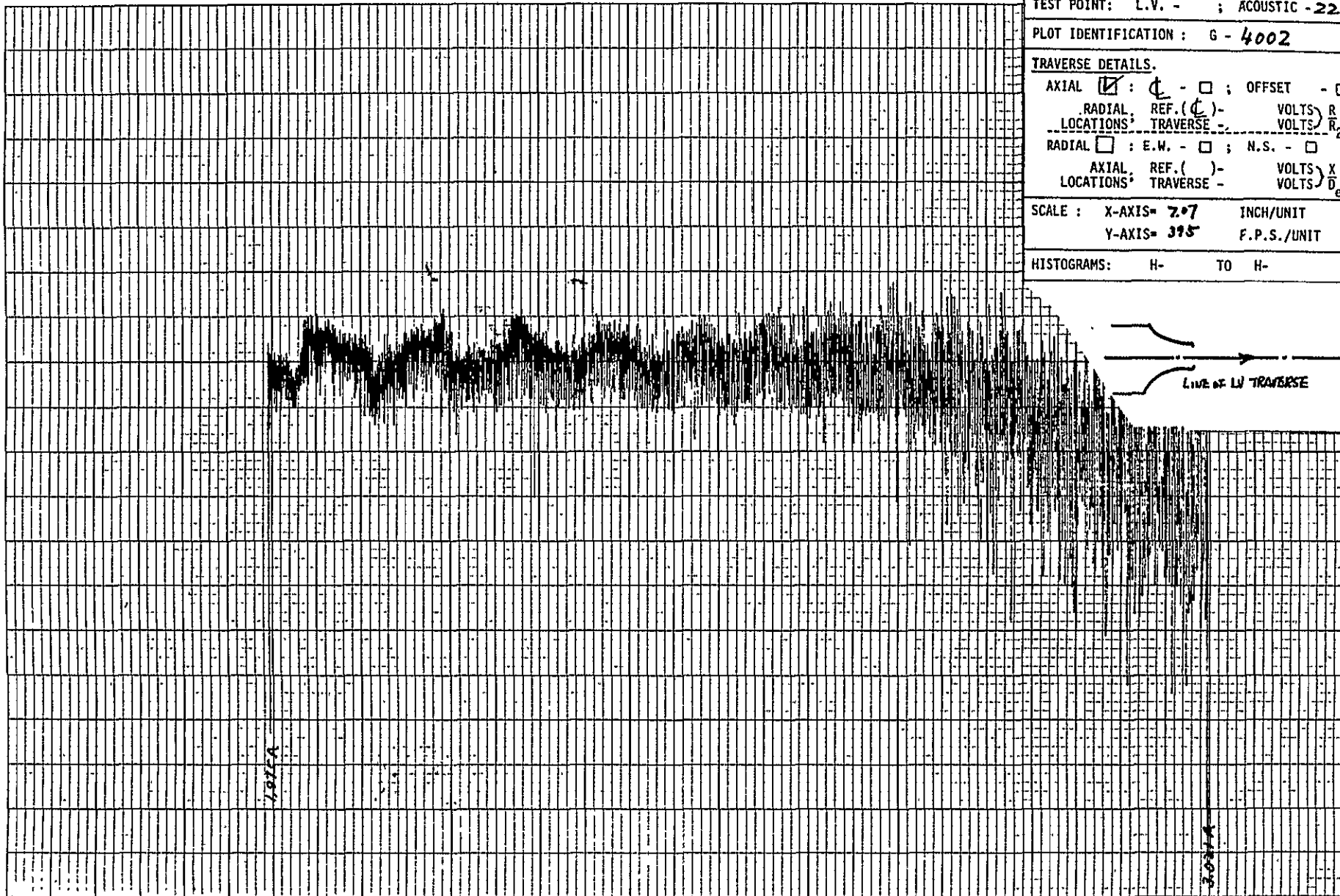
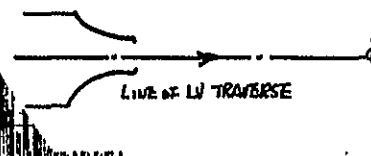
PLOT IDENTIFICATION: G - 4002

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R
 LOCATIONS: TRAVERSE - VOLTS $R_2 = 0$
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 7.07 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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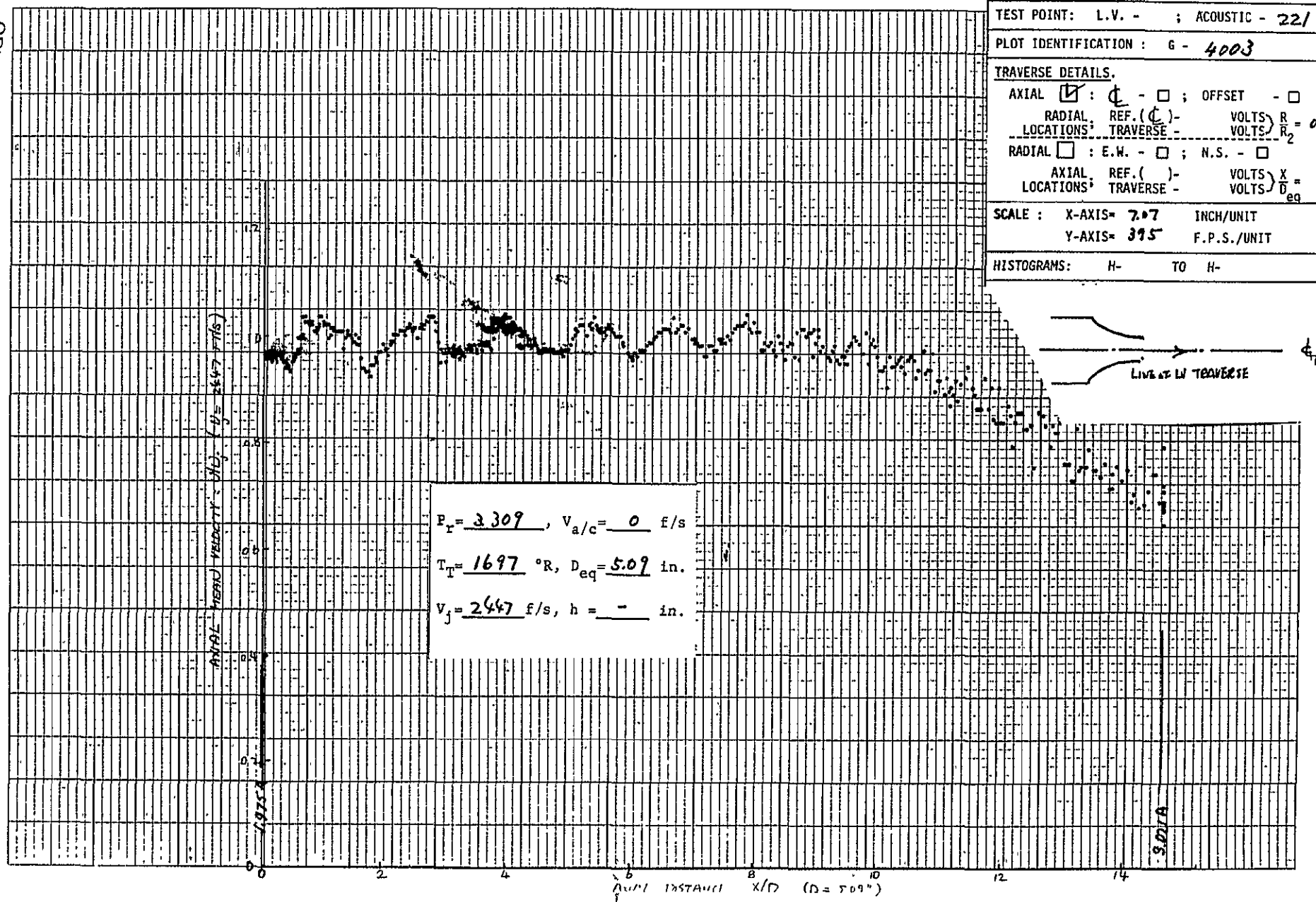
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HISTOGRAMS: H- TO H-



DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

PLOT IDENTIFICATION: G - 4004

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

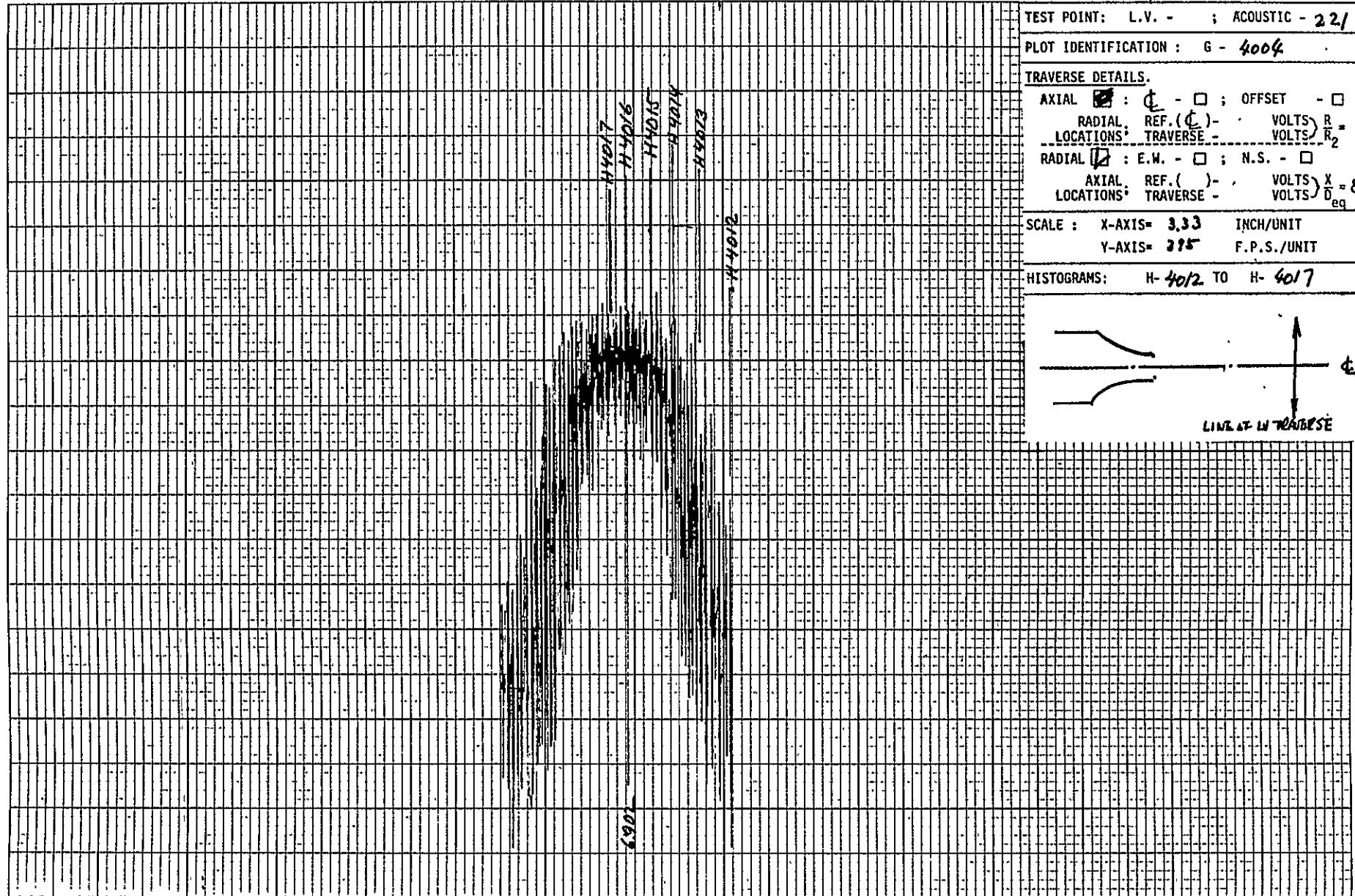
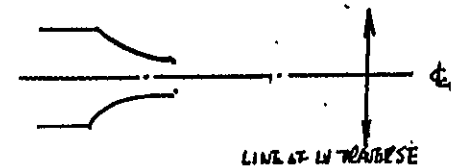
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 215 F.P.S./UNIT

HISTOGRAMS: H- 4012 TO H- 4017



DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

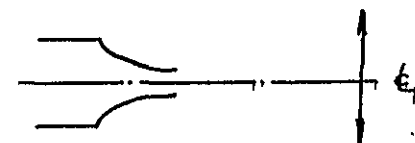
PLOT IDENTIFICATION: G - 4005

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
RADIAL REF. (C) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq} = 8.6

SCALE : X-AXIS= 3.33 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



$P_r = 3.309$, $V_{a/c} = 0$ f/s

$T_T = 1697$ °R, $D_{eq} = 8.09$ in.

$V_j = 2447$ f/s, $h =$ in.

$1/4 \phi (U_j = 2447 \text{ F/s})$

$X/D = 9.0$

-2 -1 0 1 2

DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

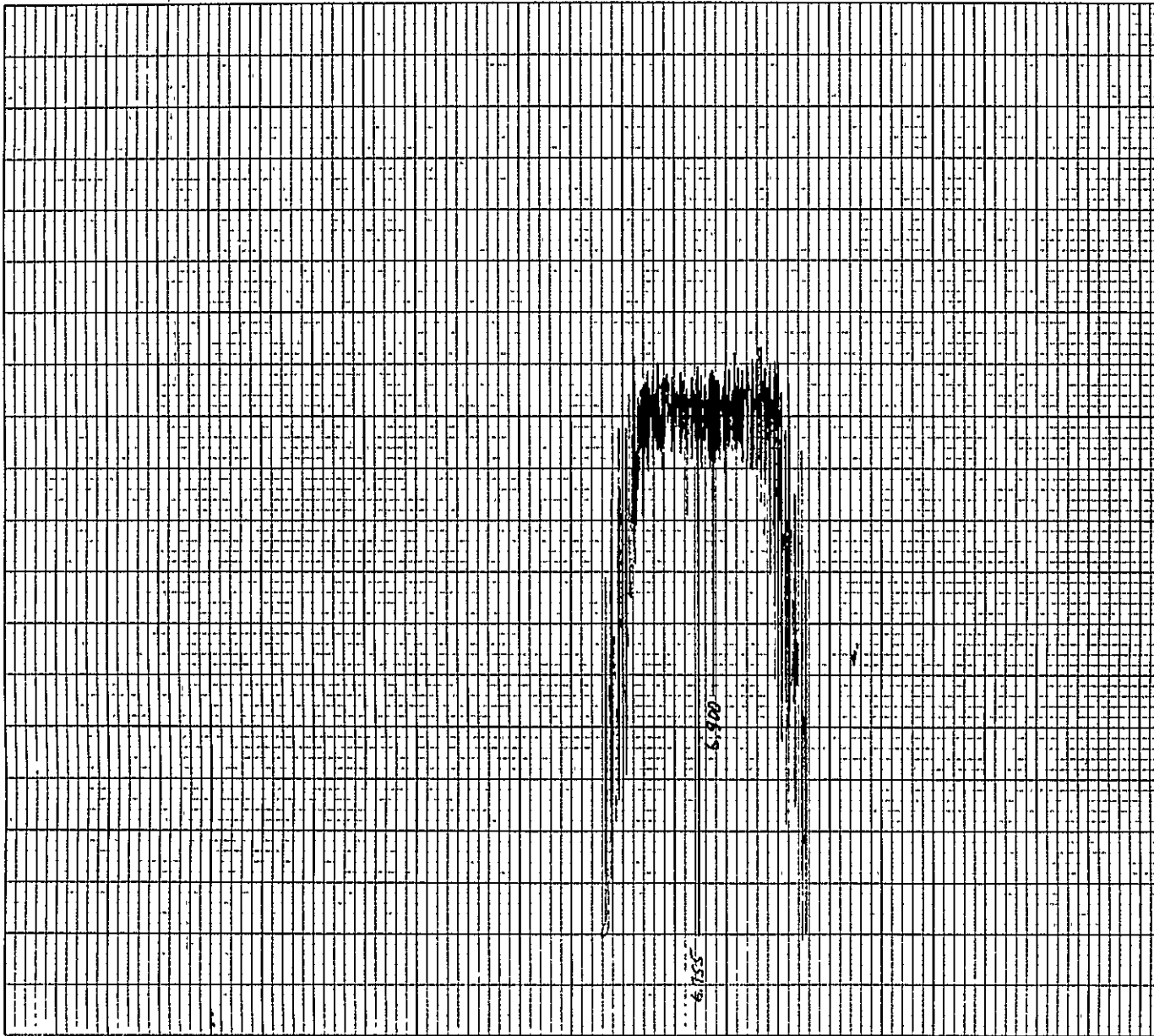
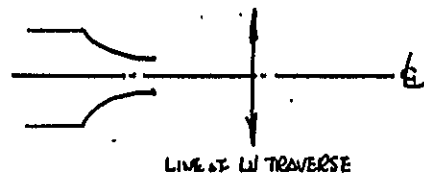
PLOT IDENTIFICATION : G - 4006

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
RADIAL, REF. (ϕ) - VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$
RADIAL ☒ : E.W. - ☐ ; N.S. - ☐
AXIAL, REF. () - VOLTS $\frac{X}{D} = 4$
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D}$ eq

SCALE : X-AXIS= 3.33 INCH/UNIT
Y-AXIS= 295 F.P.S./UNIT

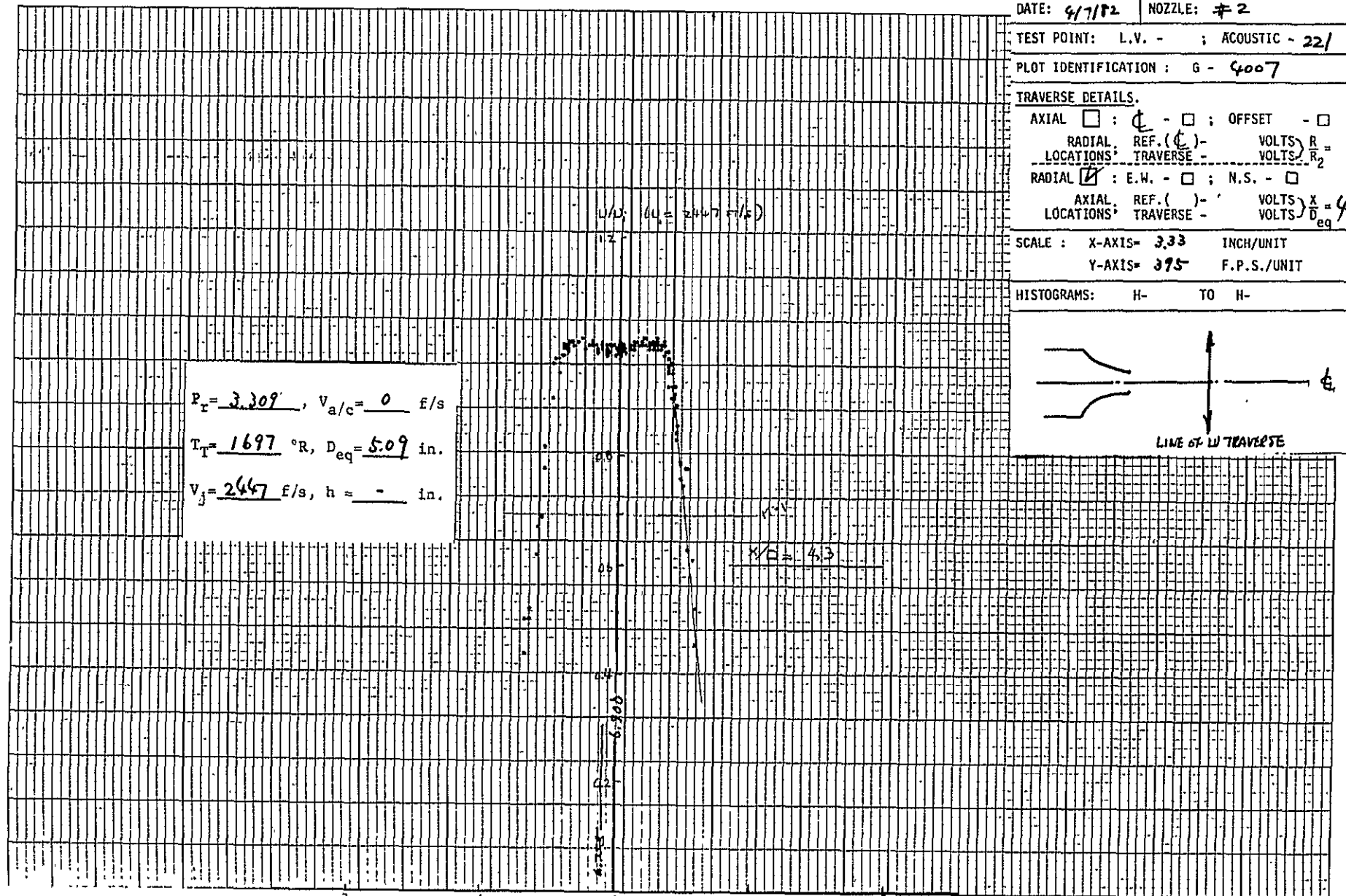
HISTOGRAMS: H- TO H-



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TEST POINT: L.V. - ; ACOUSTIC - 22/

PLOT IDENTIFICATION: G - 4007

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

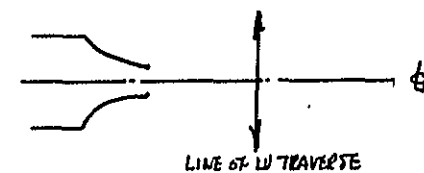
AXIAL REF. (ϕ) - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq} = 4

SCALE: X-AXIS = 3.33 INCH/UNIT

Y-AXIS = 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

PLOT IDENTIFICATION : G - 4008

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

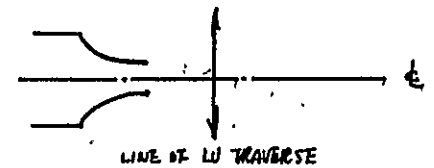
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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844

GRAPHIC CONTROLS CORPORATION
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ORIGINAL PAGE IS
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DATE: 4/7/72 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC -22/

PLOT IDENTIFICATION: G - 4010

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

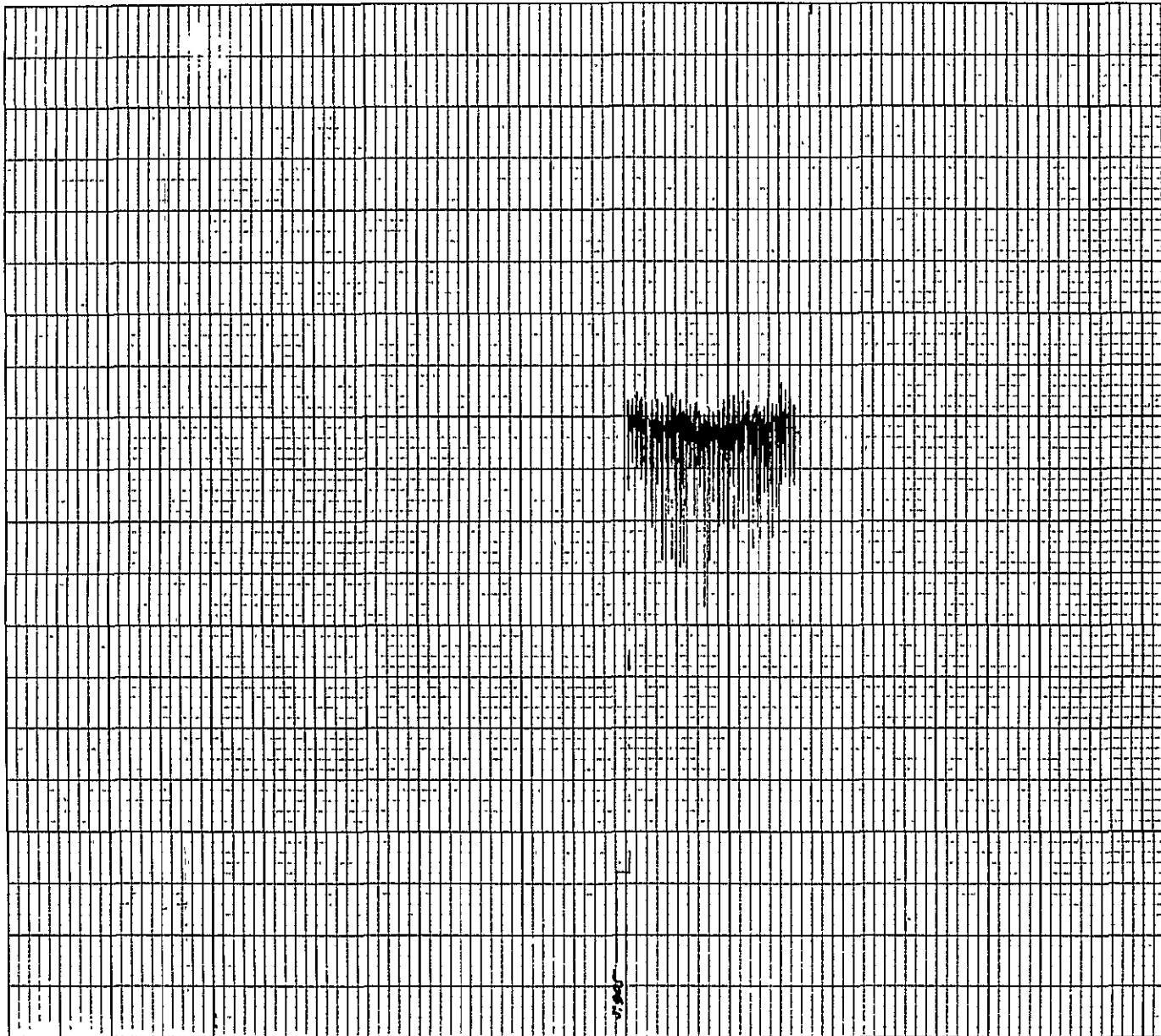
AXIAL REF. () - VOLTS X

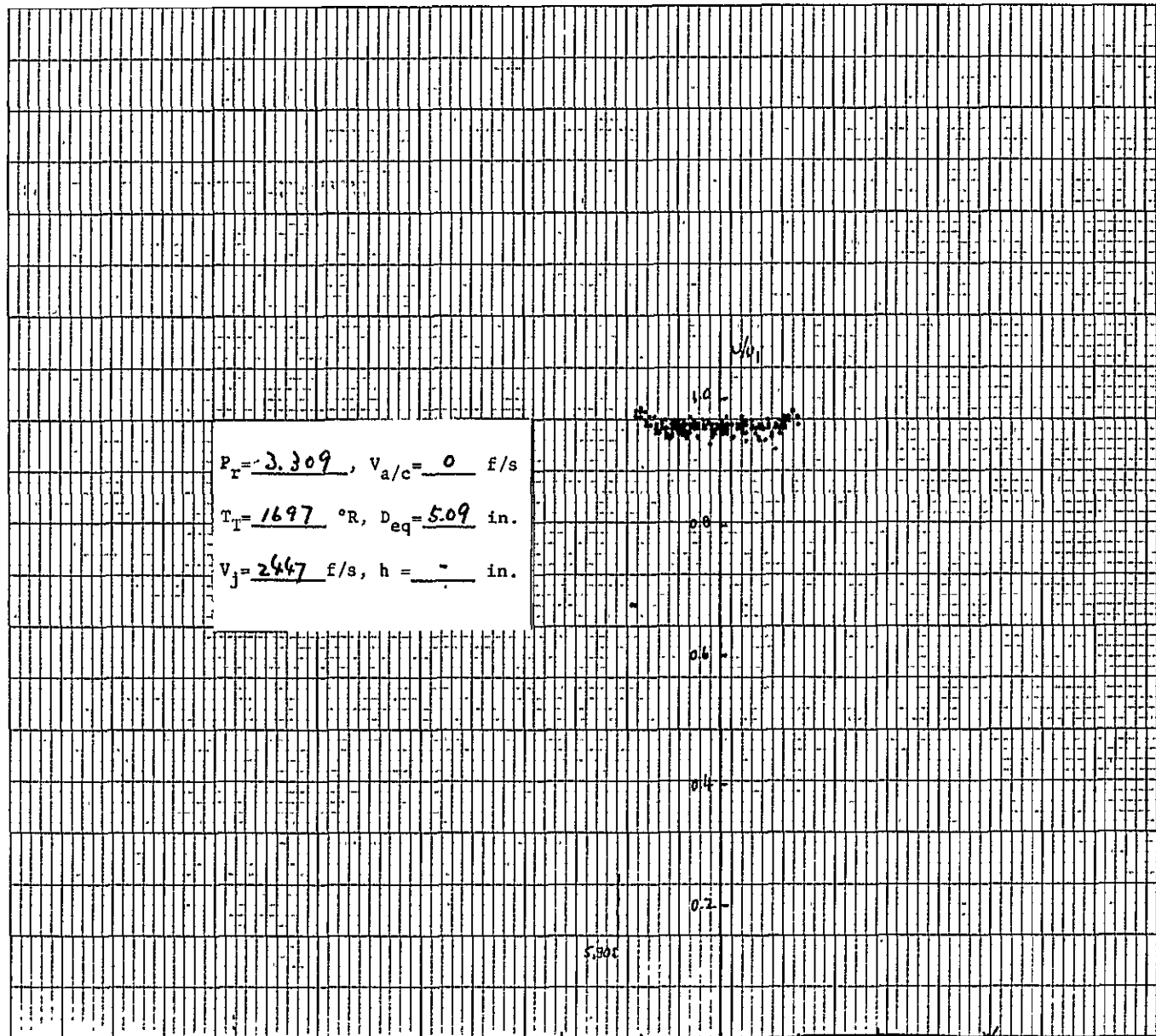
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 2.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-





$$P_z = 3.309, V_{a/c} = 0 \text{ f/s}$$

$$T_1 = 1697^\circ \text{R}, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2467 \text{ f/s}, h = \text{---} \text{ in.}$$

DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 22/

PLOT IDENTIFICATION: G - 401/

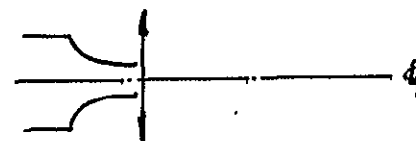
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1 LOCATIONS TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS $X = a/$ LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 3.33 INCH/UNIT

Y-AXIS = 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



LINE OF LI TRAVERSE

DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 207

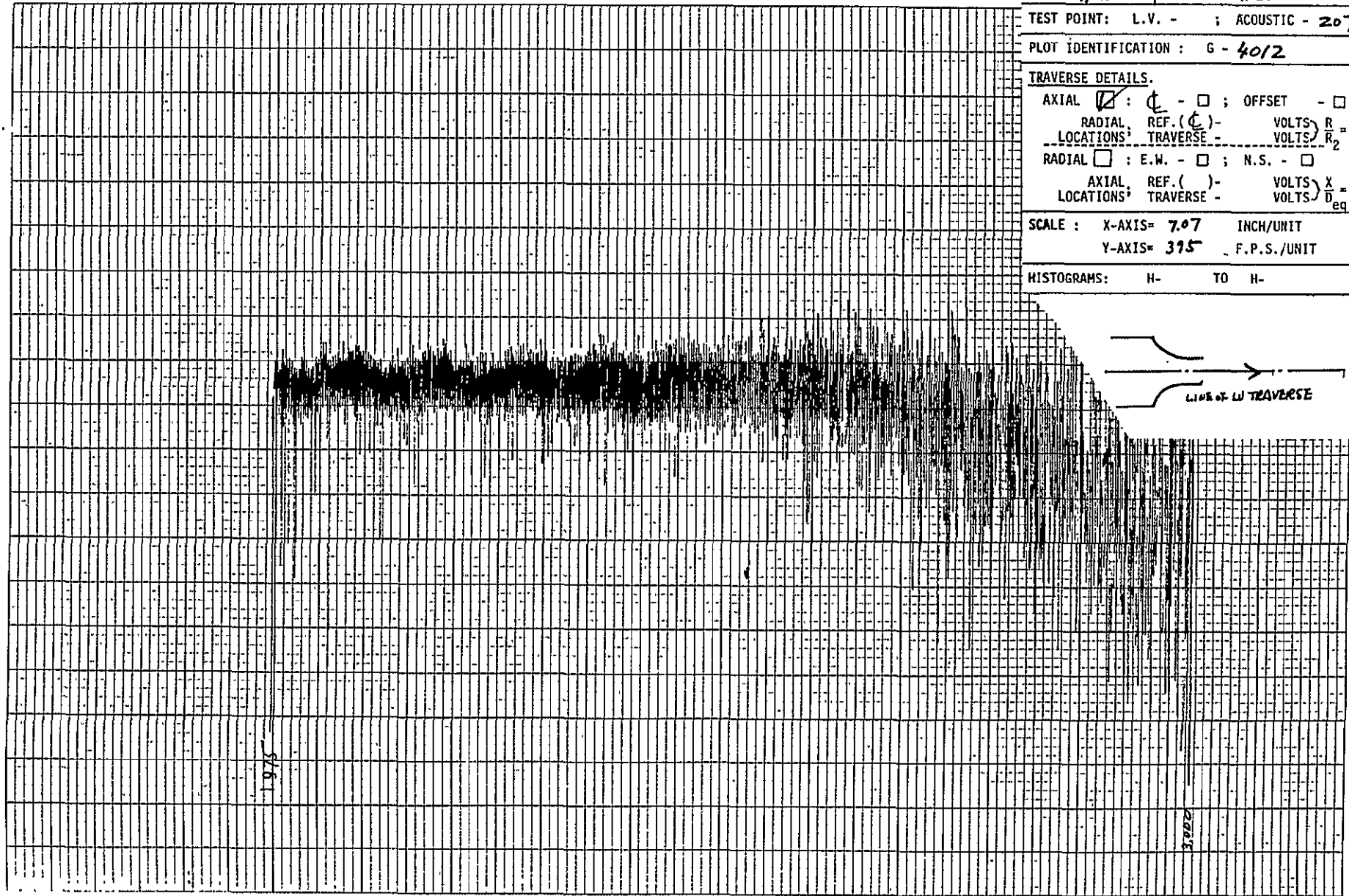
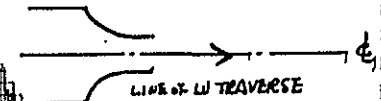
PLOT IDENTIFICATION: G - 4012

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 7.07 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



G-4012

200.5

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847

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DATE: 4/7/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 207

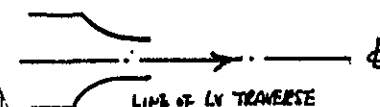
PLOT IDENTIFICATION: G - 4013

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$ 0
 LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$
 LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$

SCALE : X-AXIS= 7.7 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



AXIAL VELOCITY - 2372 FTS

$P_r = 3.018$, $V_{a/c} = 0$ f/s
 $T_T = 1707$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2372$ f/s, $h = -$ in.

NO 1111 X

848

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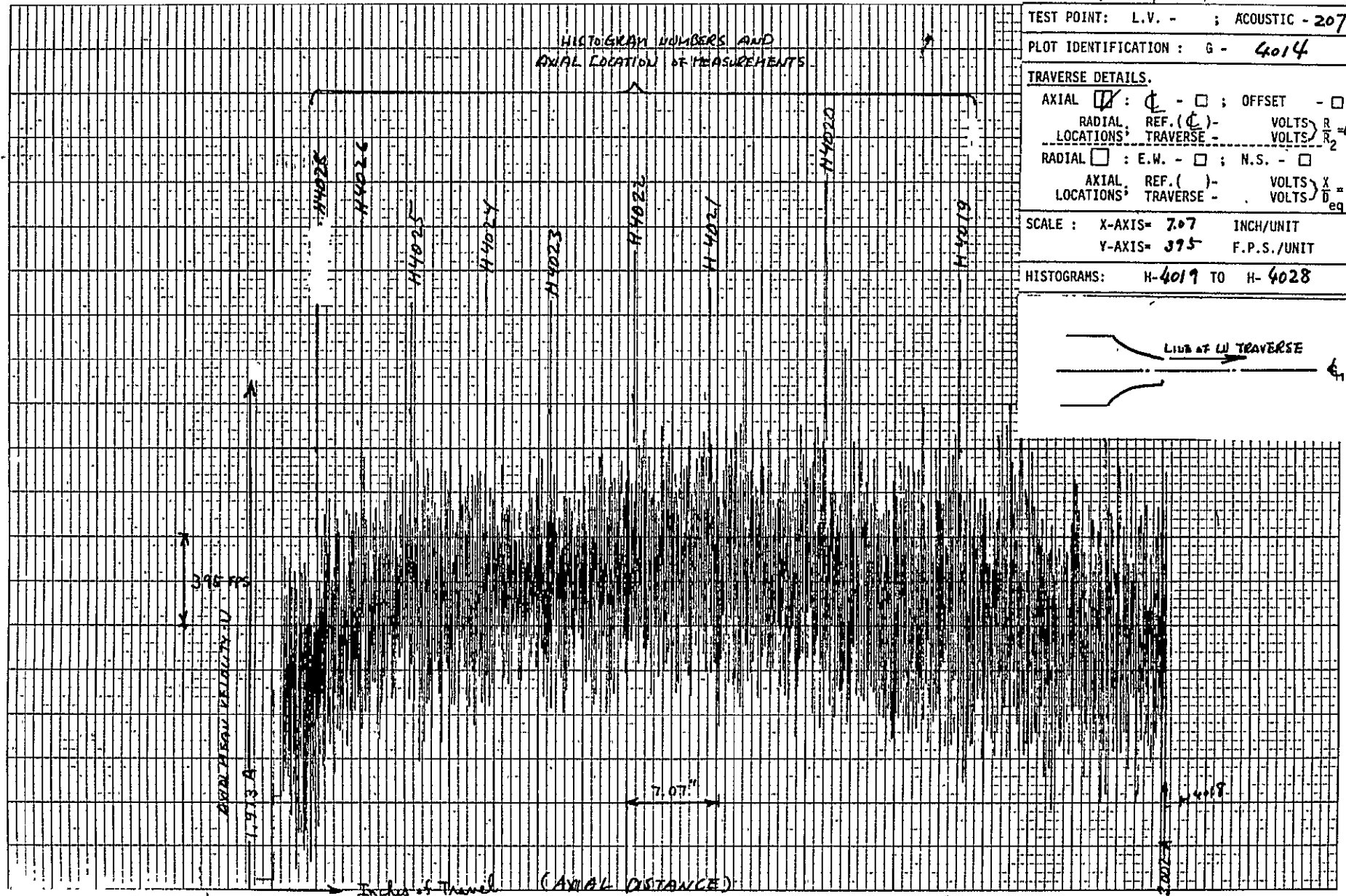
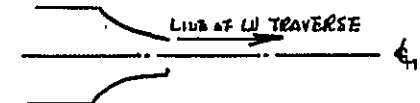
PLOT IDENTIFICATION: G - 4014

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (C) - VOLTS R
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 7.07 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H-4019 TO H-4028



17-000-000

2-1 541

NO 1011X

843

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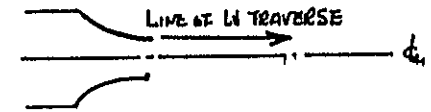
PLOT IDENTIFICATION: G - 4015

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS TRAVERSE - VOLTS R_2
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 7.07 INCH/UNIT
 Y-AXIS = 375 F.P.S./UNIT

HISTOGRAMS: H- TO H-



$P_r = 3.018$, $V_{a/c} = 0$ f/s
 $T_T = 1707$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2372$ f/s, $h = -$ in.

AXIAL TRAVERSE (7.07 INCH/UNIT)

375 F.P.S.

7.07

$\sqrt{P} (P = 5.09)$

NO. 1011 AX

850

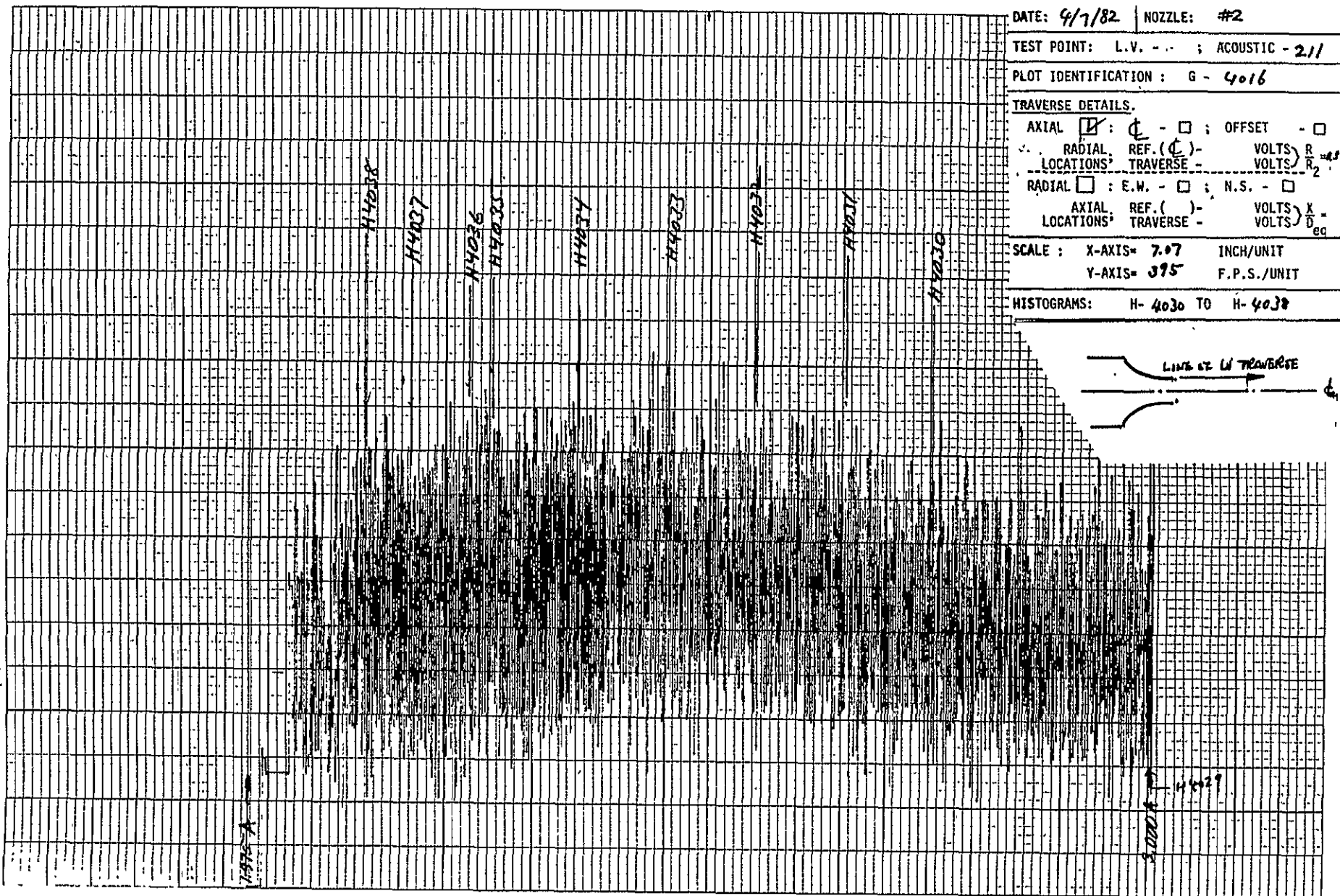
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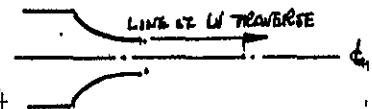
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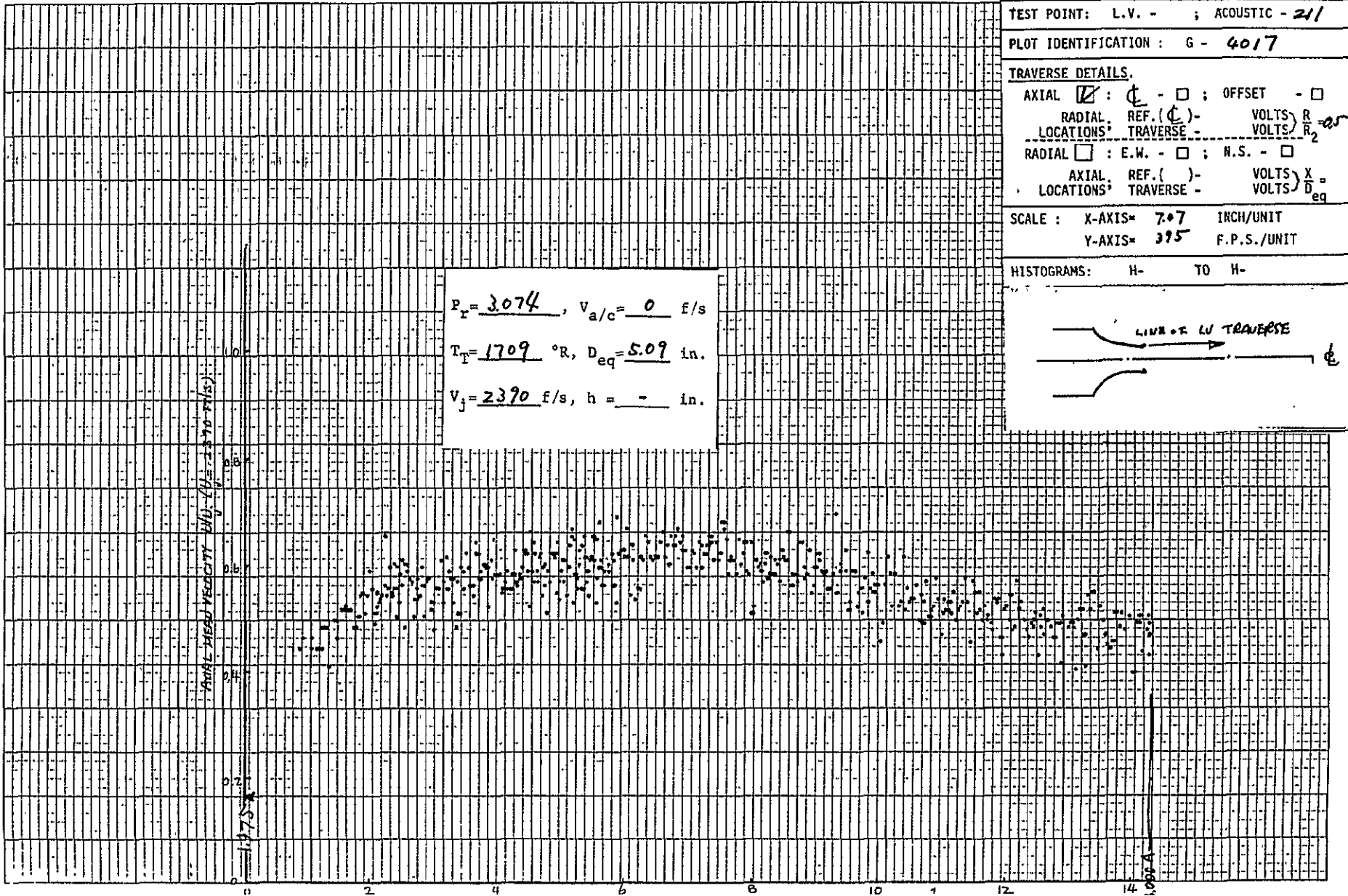
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DATE: 9/7/82 NOZZLE: #2
TEST POINT: L.V. - - ; ACOUSTIC - 211
PLOT IDENTIFICATION: G - 4016
TRAVERSE DETAILS:
AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐
RADIAL REF. (ϕ) - VOLTS R
LOCATIONS TRAVERSE - VOLTS R_2
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}
SCALE : X-AXIS= 7.07 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT
HISTOGRAMS: H- 4030 TO H- 4038





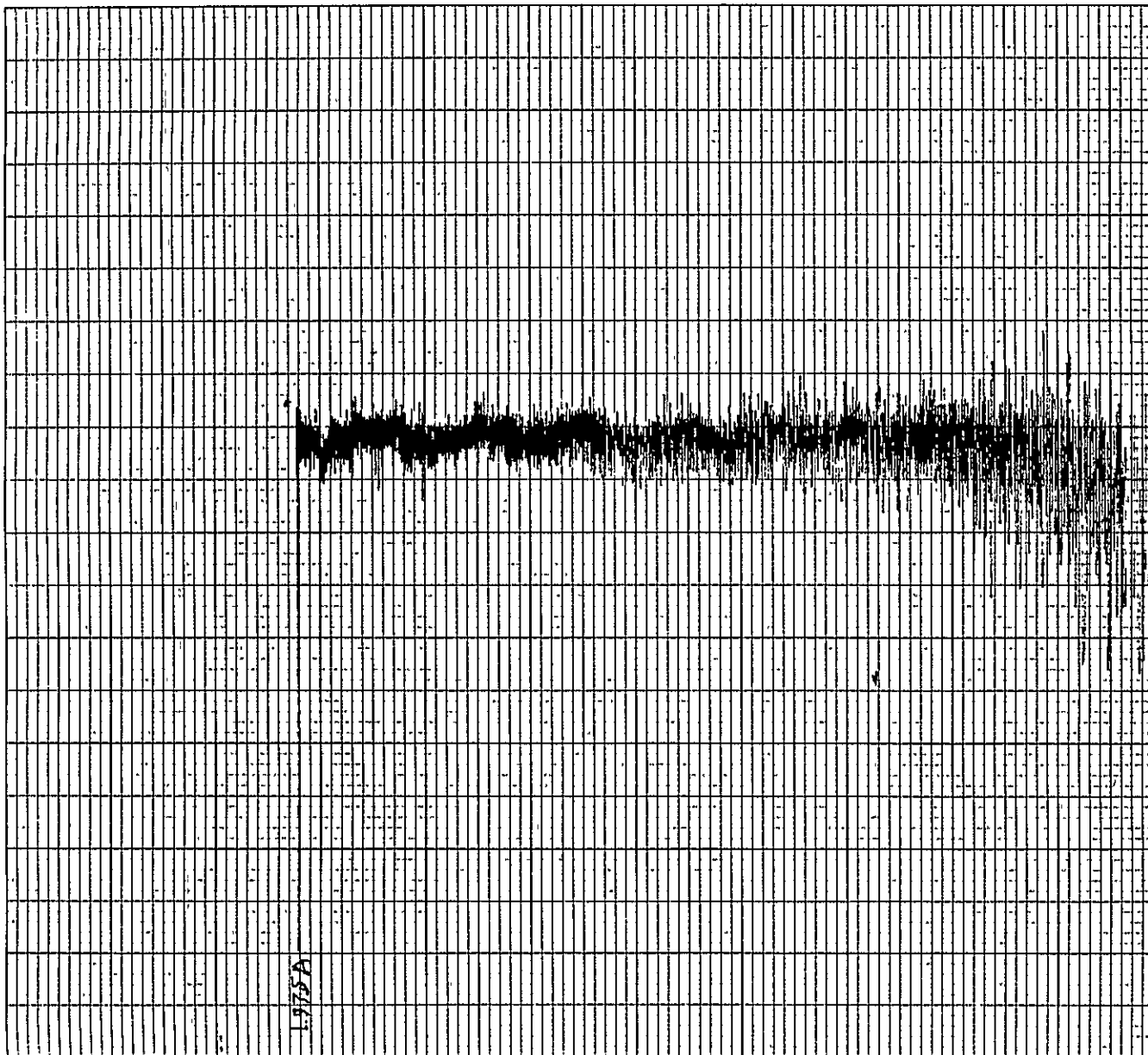
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TEST POINT: L.V. - ; ACOUSTIC - 211
PLOT IDENTIFICATION: G - 4017
TRAVERSE DETAILS:
AXIAL ☒ : ☐ - ☐ ; OFFSET - ☐
RADIAL REF. (C) - VOLTS $R_2 = 0.5$
LOCATIONS TRAVERSE - VOLTS R_2
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X_d
LOCATIONS TRAVERSE - VOLTS D_{eq}
SCALE: X-AXIS = 7.07 INCH/UNIT
Y-AXIS = 375 F.P.S./UNIT
HISTOGRAMS: H- TO H-

NO. XV 101

854

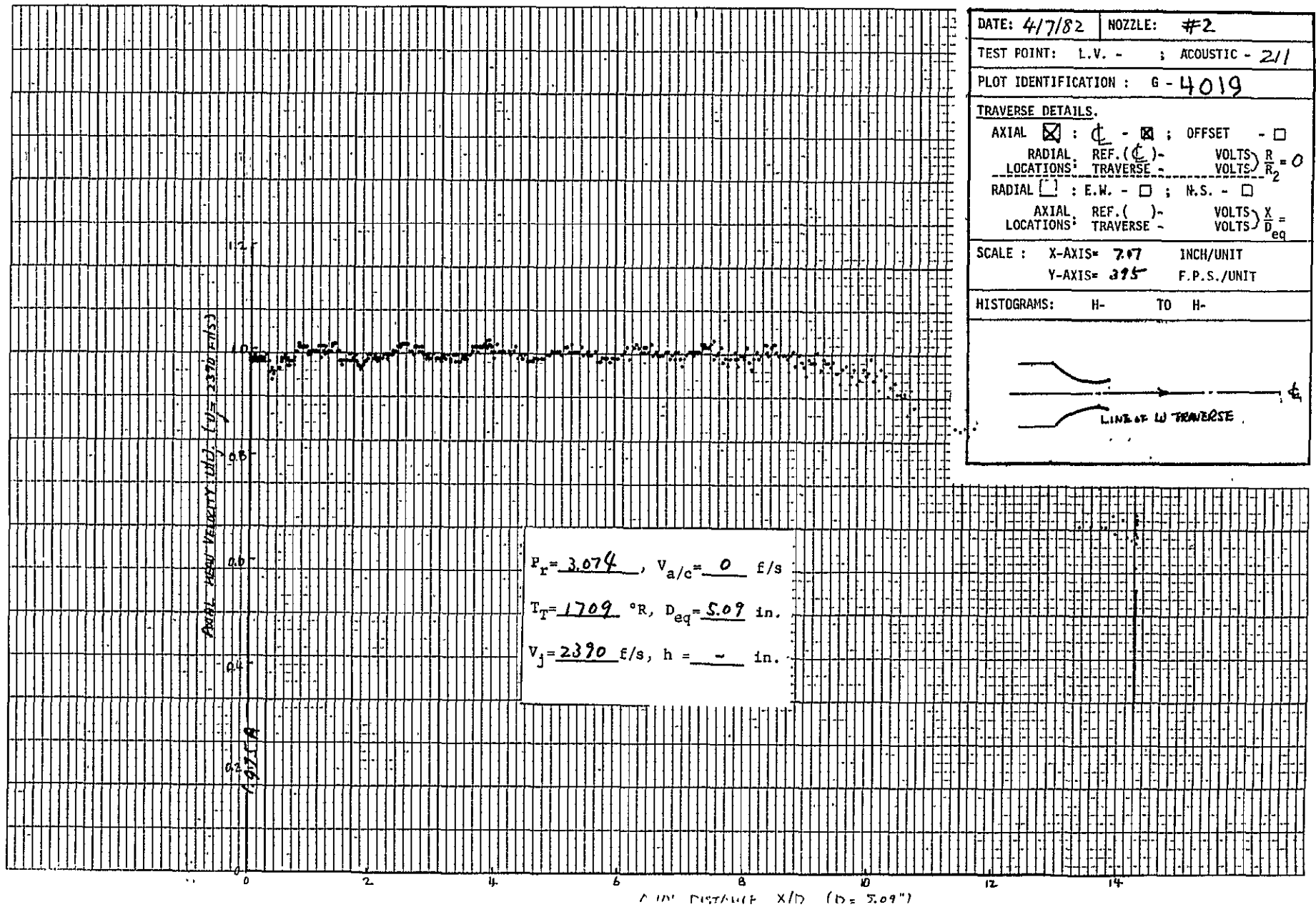
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DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 2/1	
PLOT IDENTIFICATION: G-4018	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 0$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

855



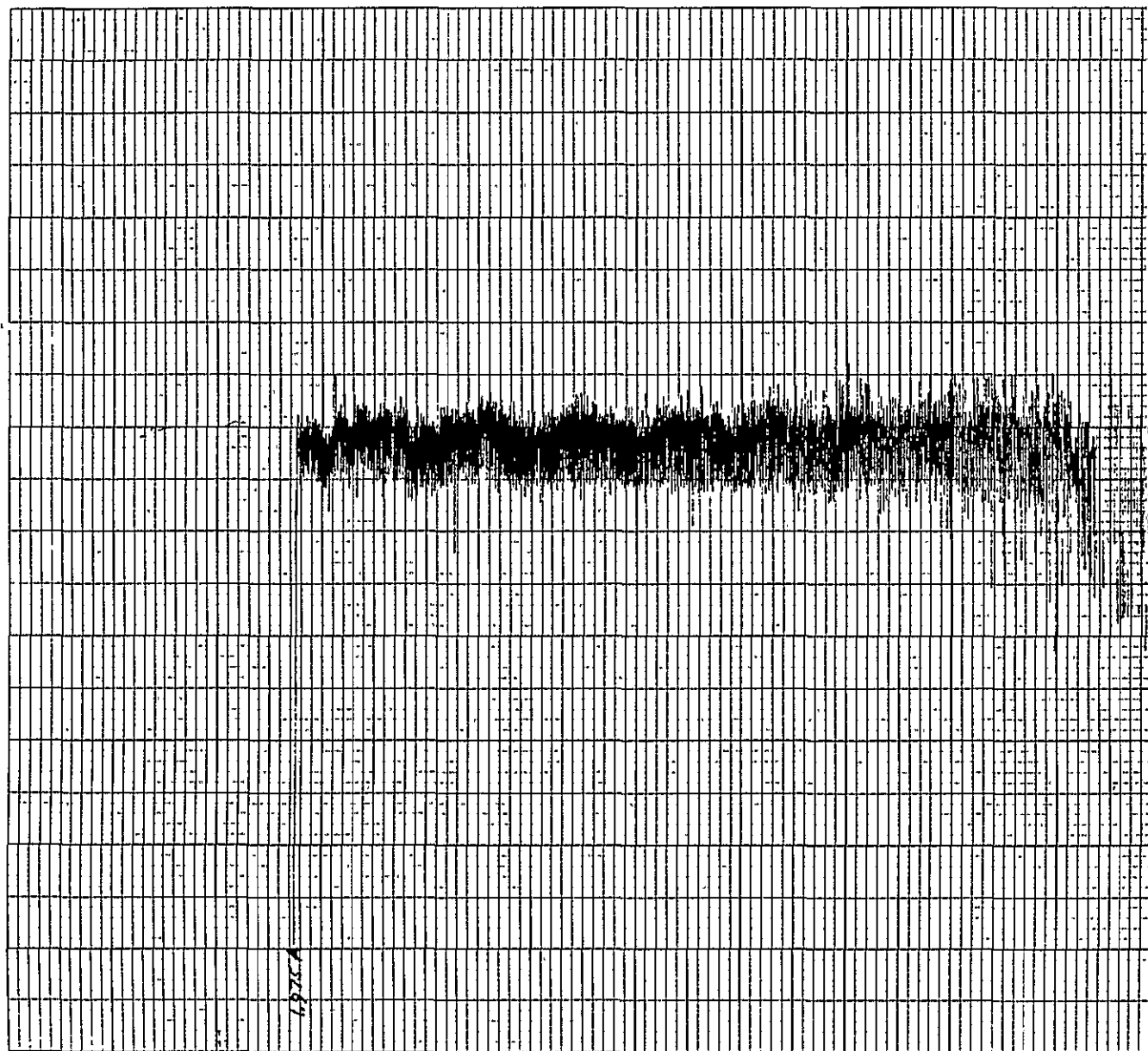
DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 211
PLOT IDENTIFICATION: G-4019	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 0$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; H.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 7.07	INCH/UNIT
Y-AXIS= 375	F.P.S./UNIT
HISTOGRAMS: H- TO H-	

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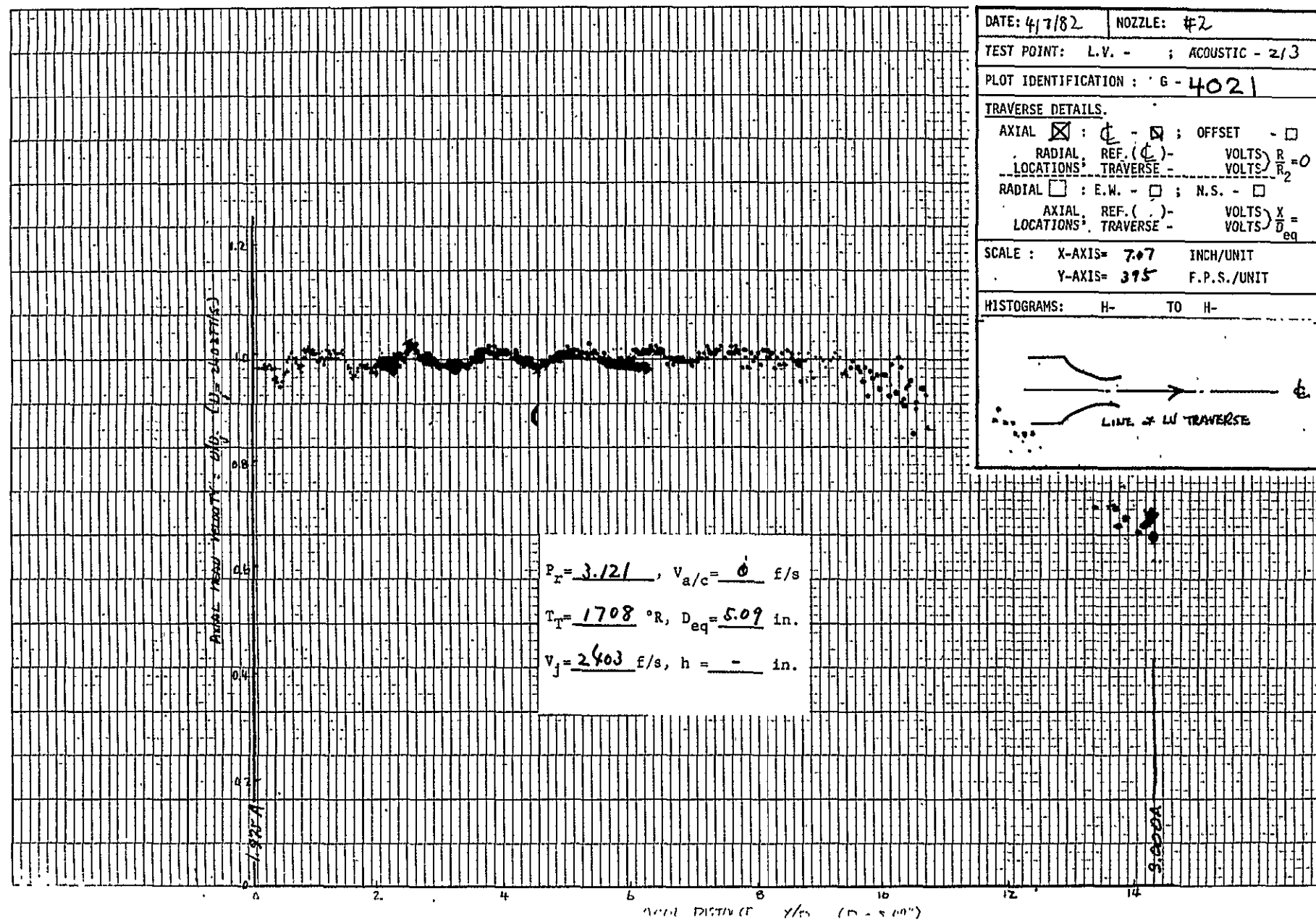
857

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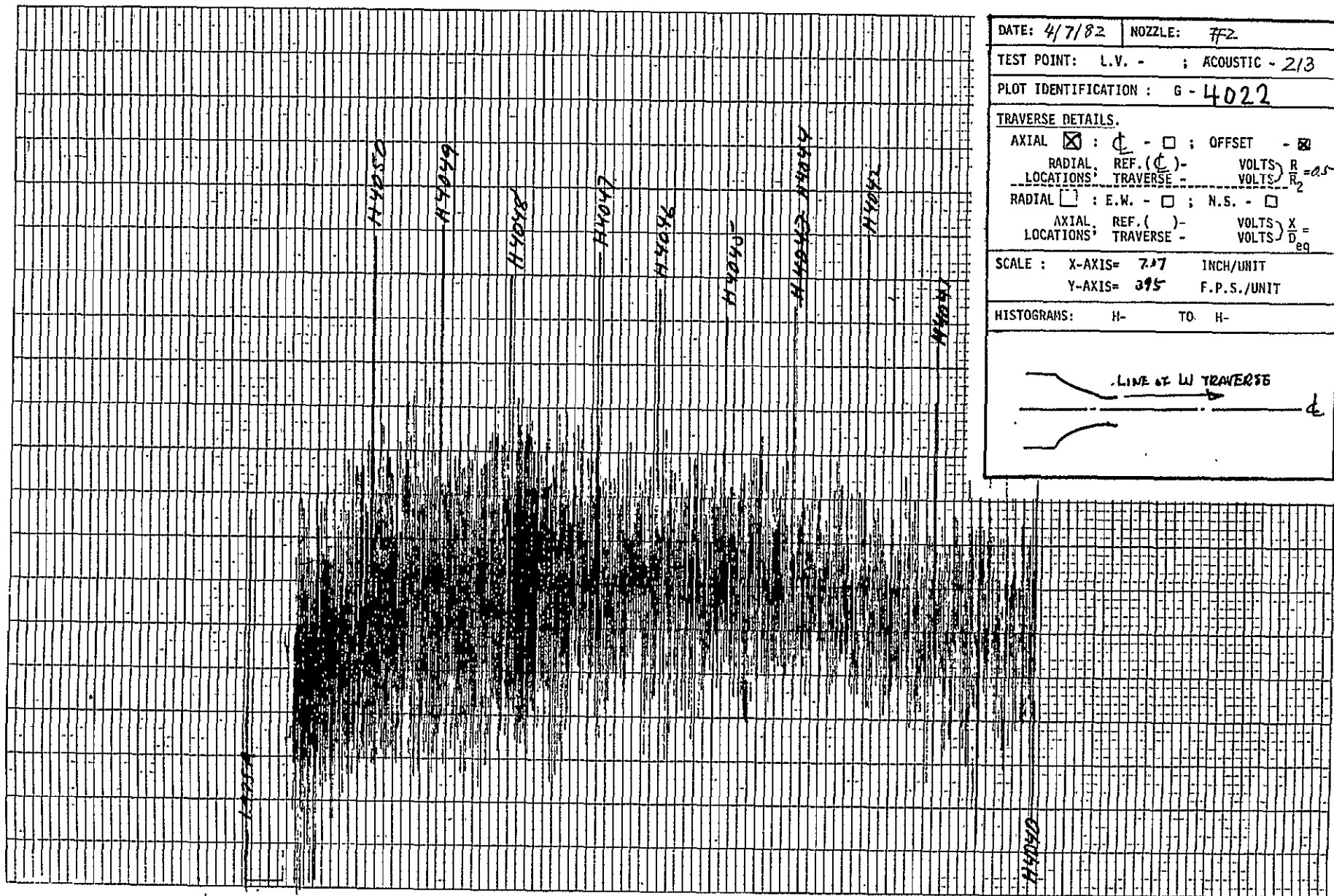


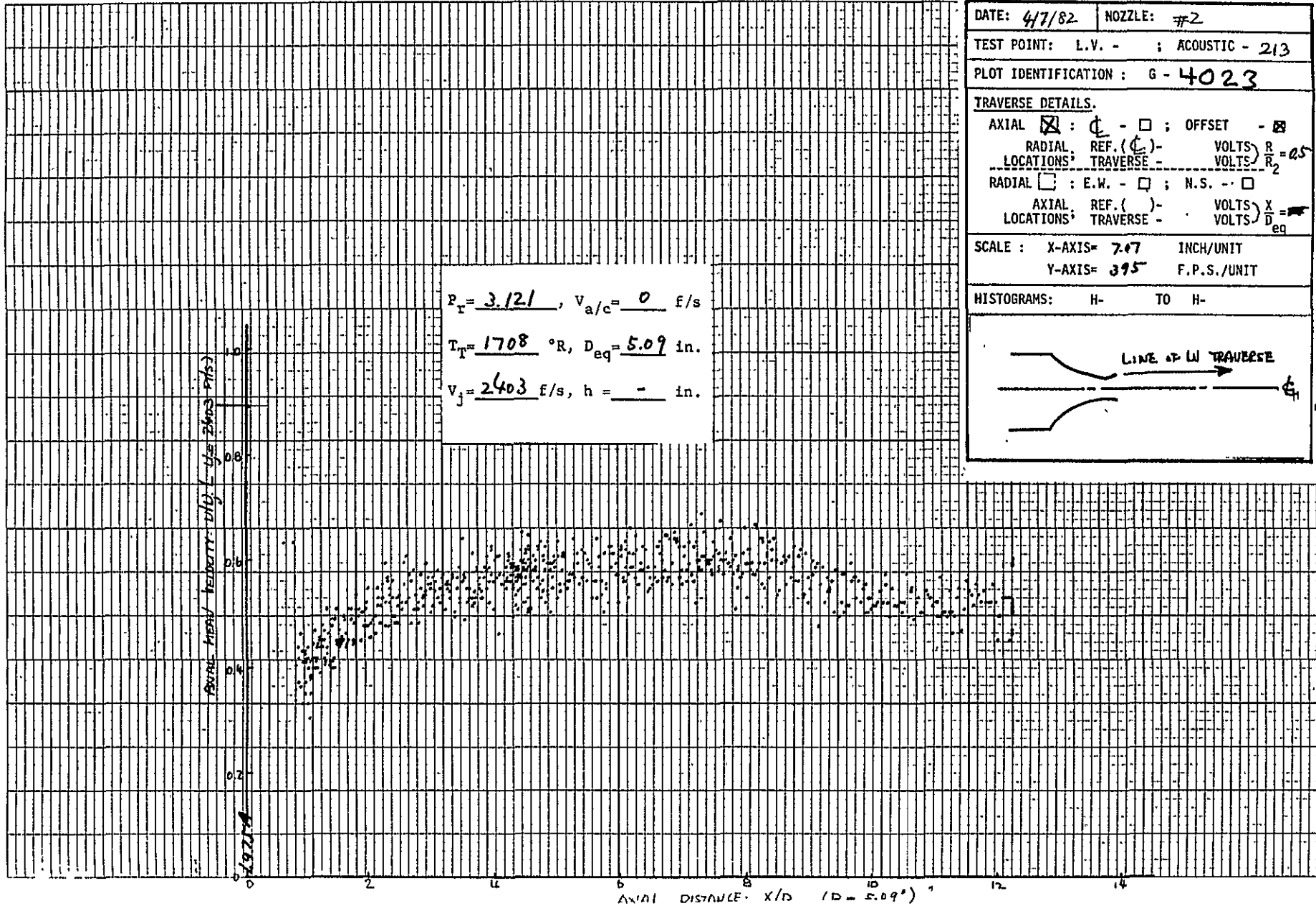
DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 2/3	
PLOT IDENTIFICATION: G - 4020	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/> RADIAL REF. (ϕ) - VOLTS $R_2 = 0$ LOCATIONS TRAVERSE - VOLTS R_2 RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/> AXIAL REF. () - VOLTS X_{eq} LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 2/3	
PLOT IDENTIFICATION: G - 4021	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 0$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



$P_r = 3.121$, $V_{a/c} = 0$ f/s
 $T_T = 1708$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2403$ f/s, $h = -$ in.

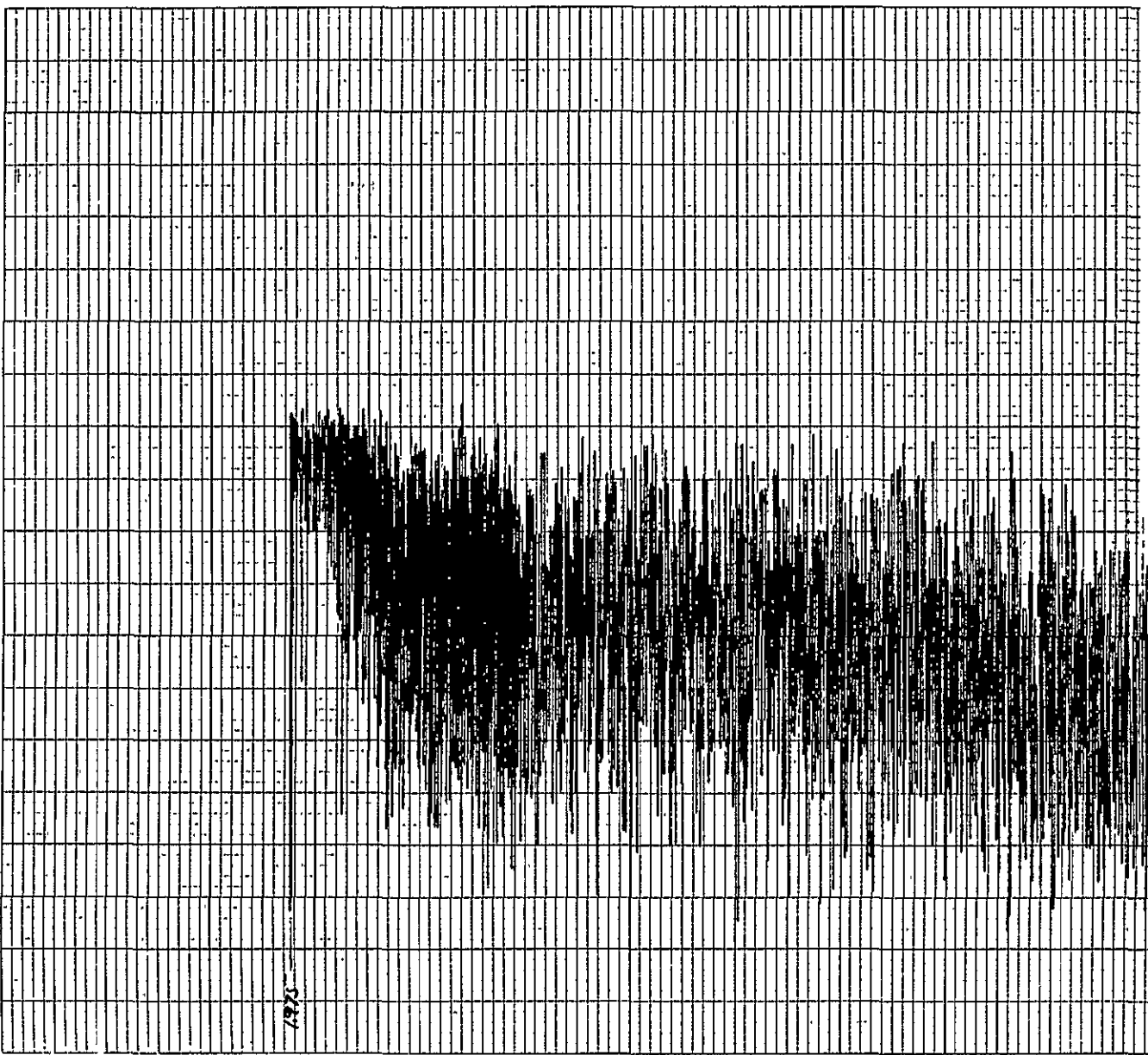




DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 213
PLOT IDENTIFICATION: G - 4023	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 25$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X/D_{eq}
LOCATIONS TRAVERSE -	VOLTS X/D_{eq}
SCALE: X-AXIS = 7.47	INCH/UNIT
Y-AXIS = 395	F.P.S./UNIT
HISTOGRAMS: H- TO H-	

861

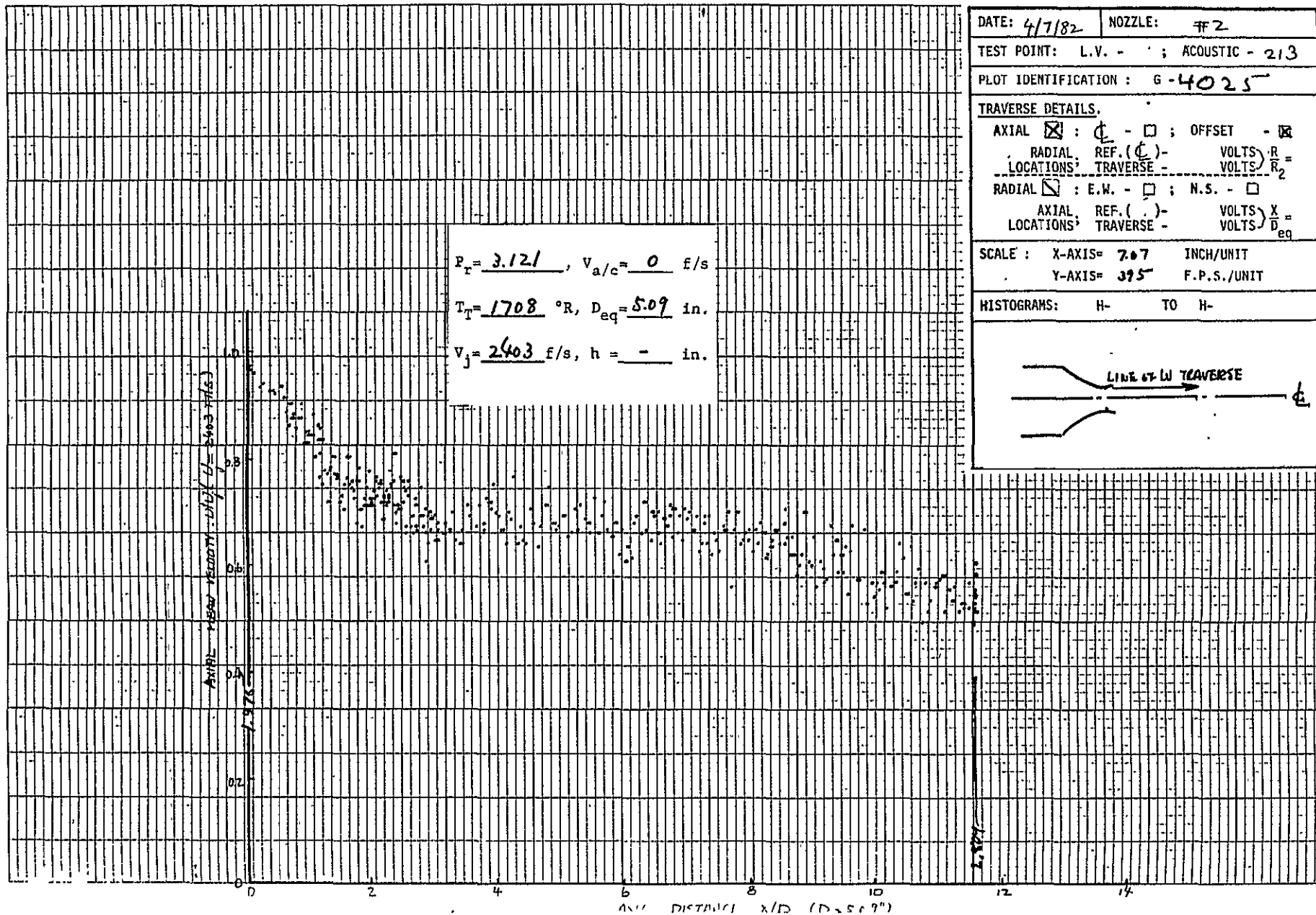
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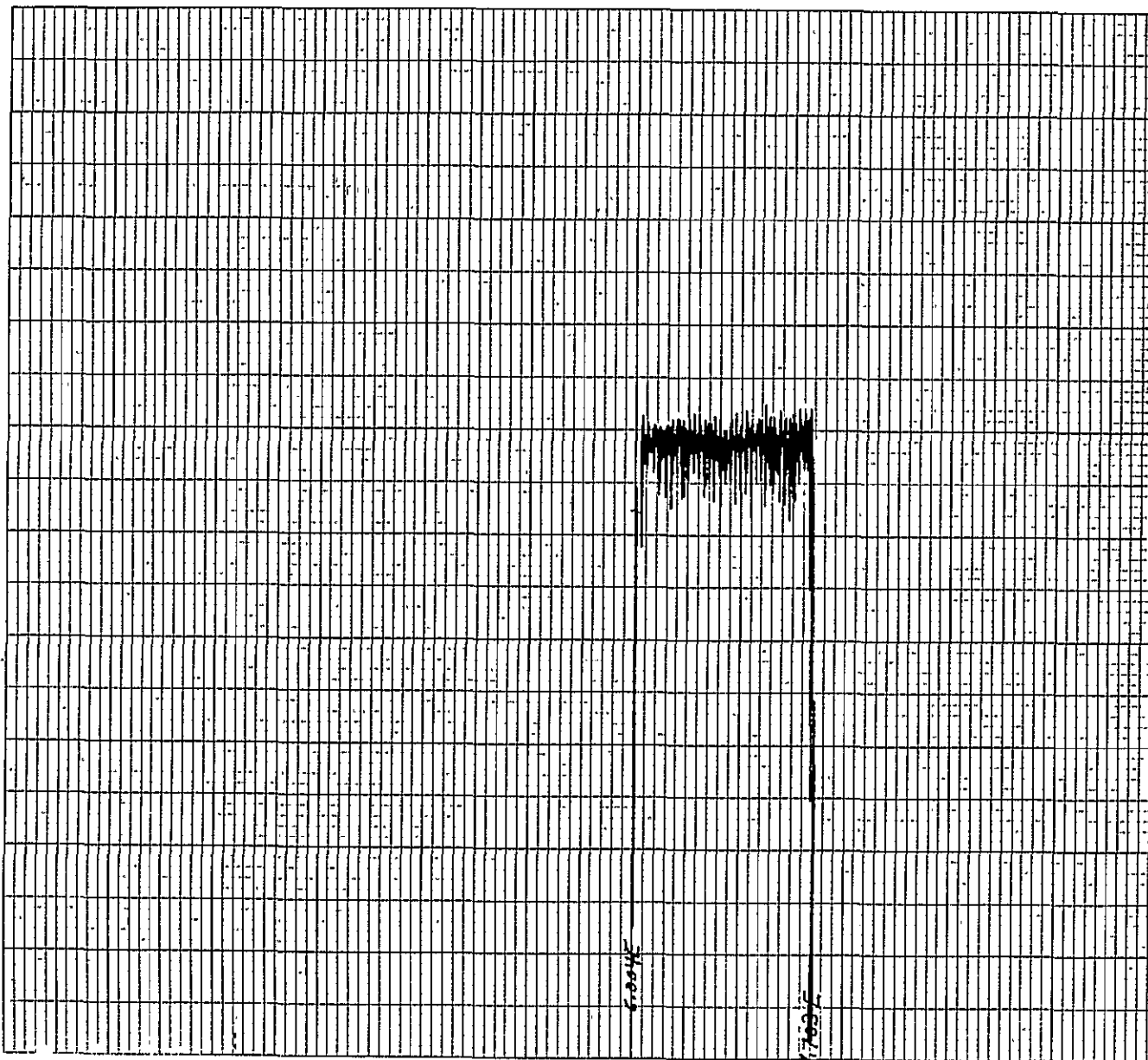


1267

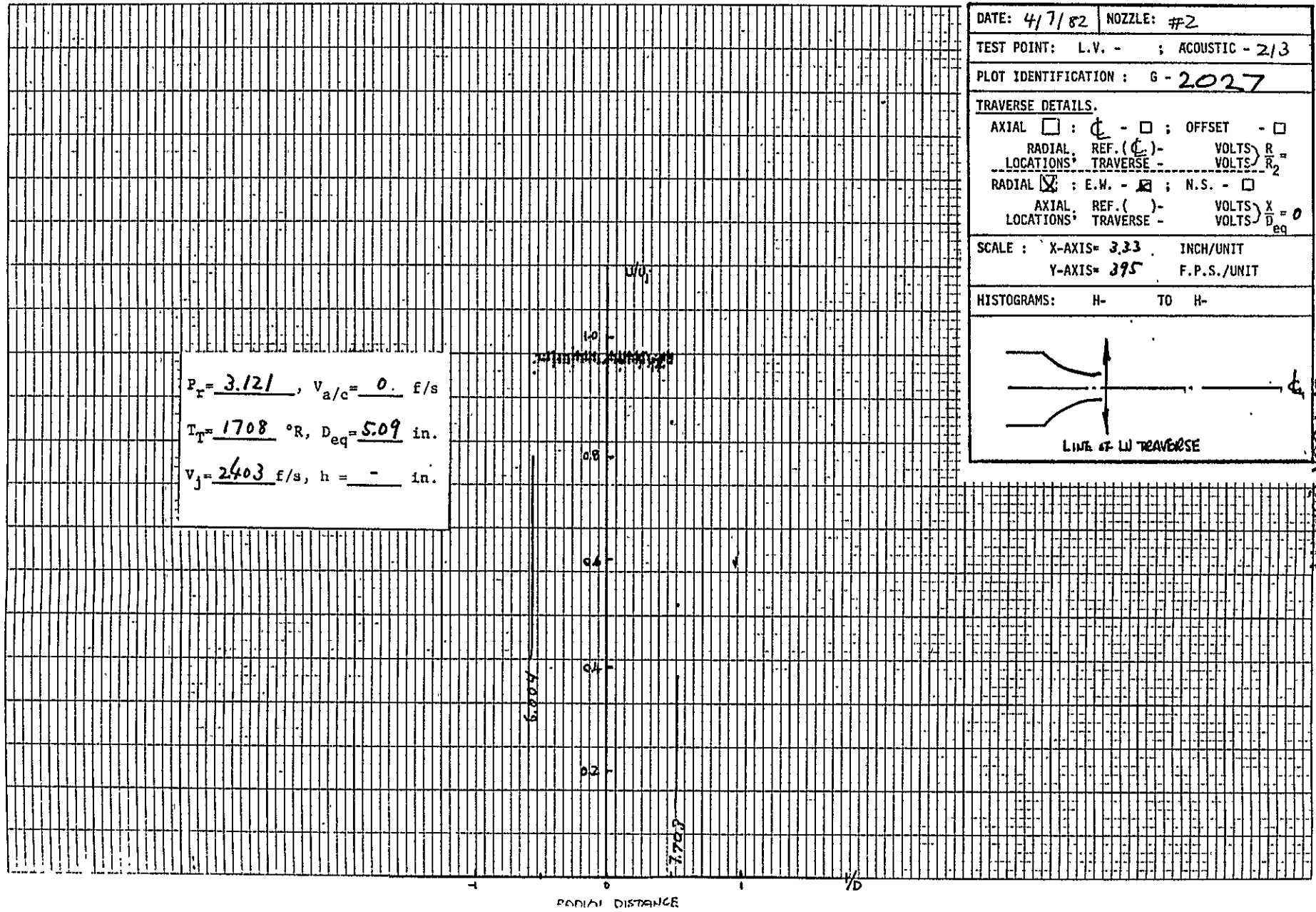
DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 2/3	
PLOT IDENTIFICATION : 6-4024	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} \approx 1$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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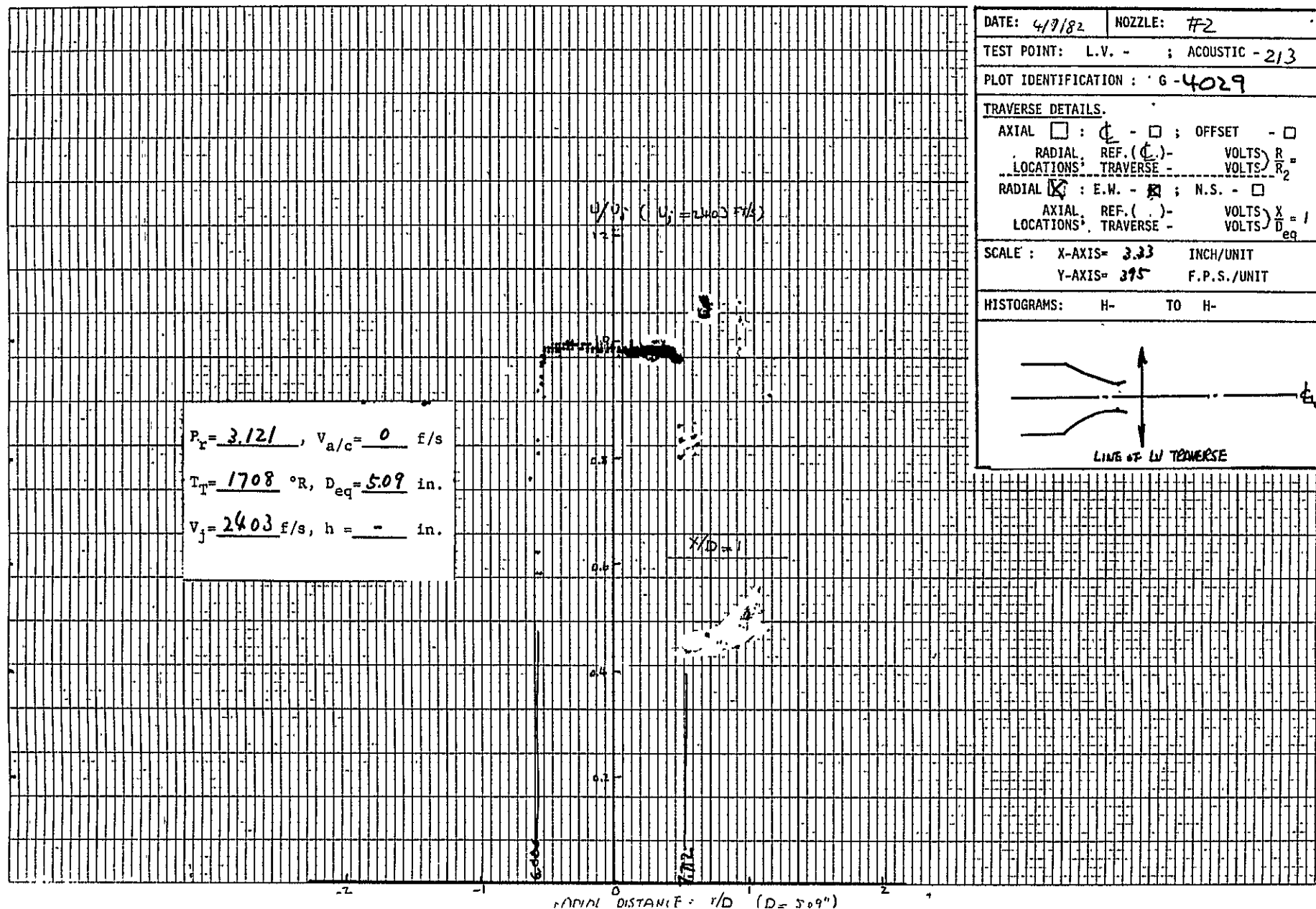
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TEST POINT: L.V. -	ACOUSTIC - 213
PLOT IDENTIFICATION: G-2026	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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LINE OF W TRAVERSE

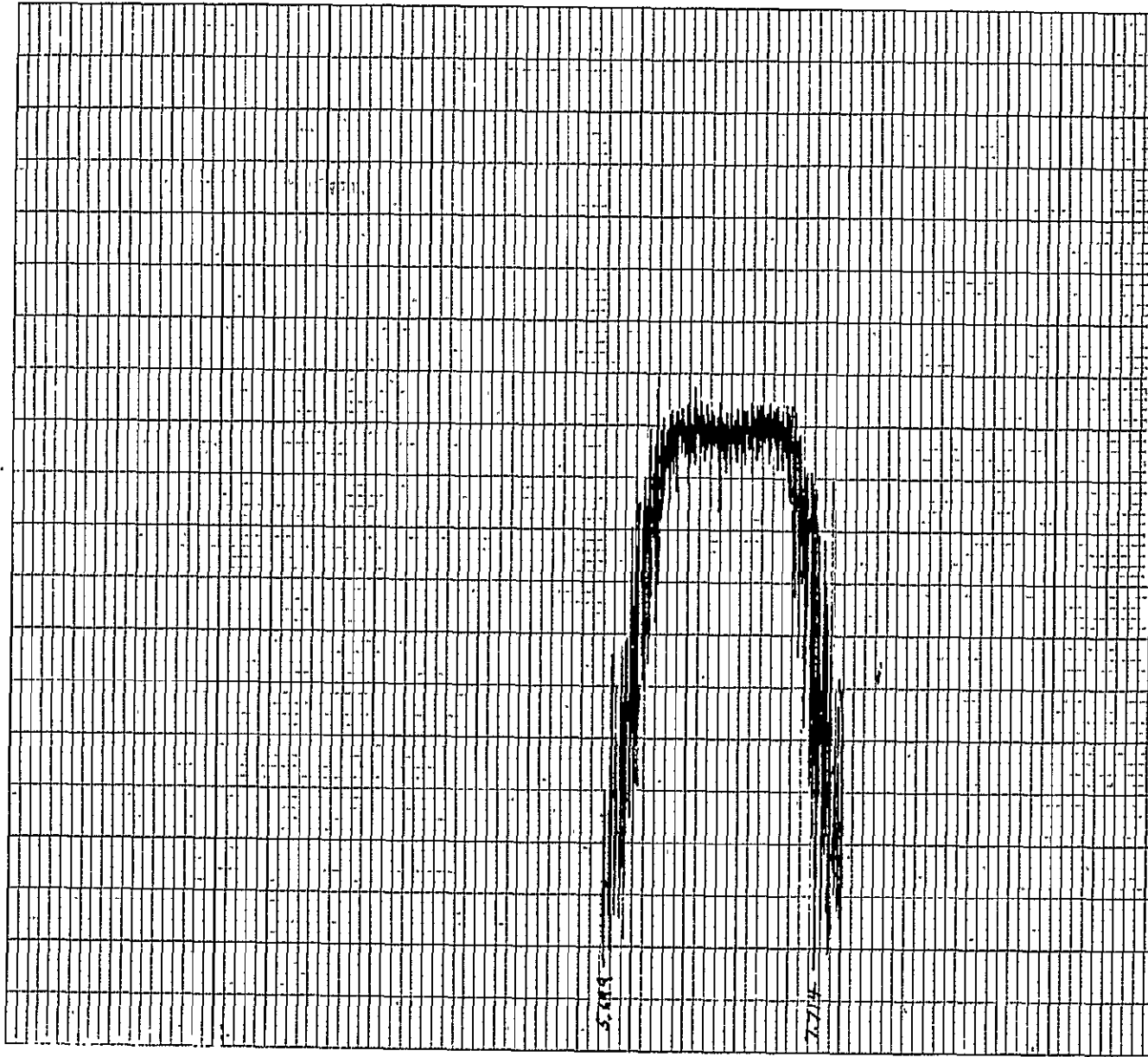
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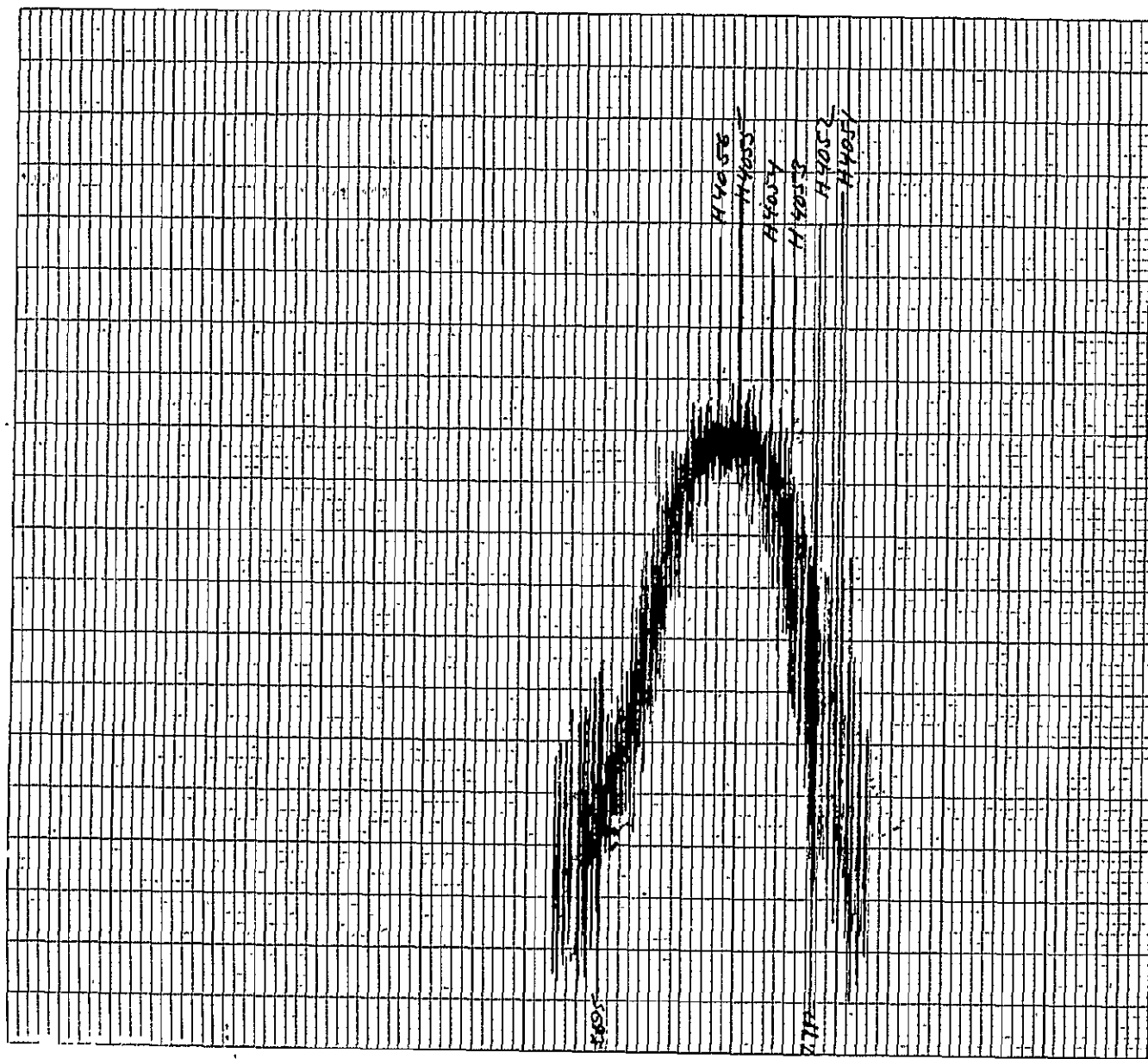


DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 213	
PLOT IDENTIFICATION: G - 4030	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D} = 4.3$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D} = 4.3$	
SCALE : X-AXIS= 0.33 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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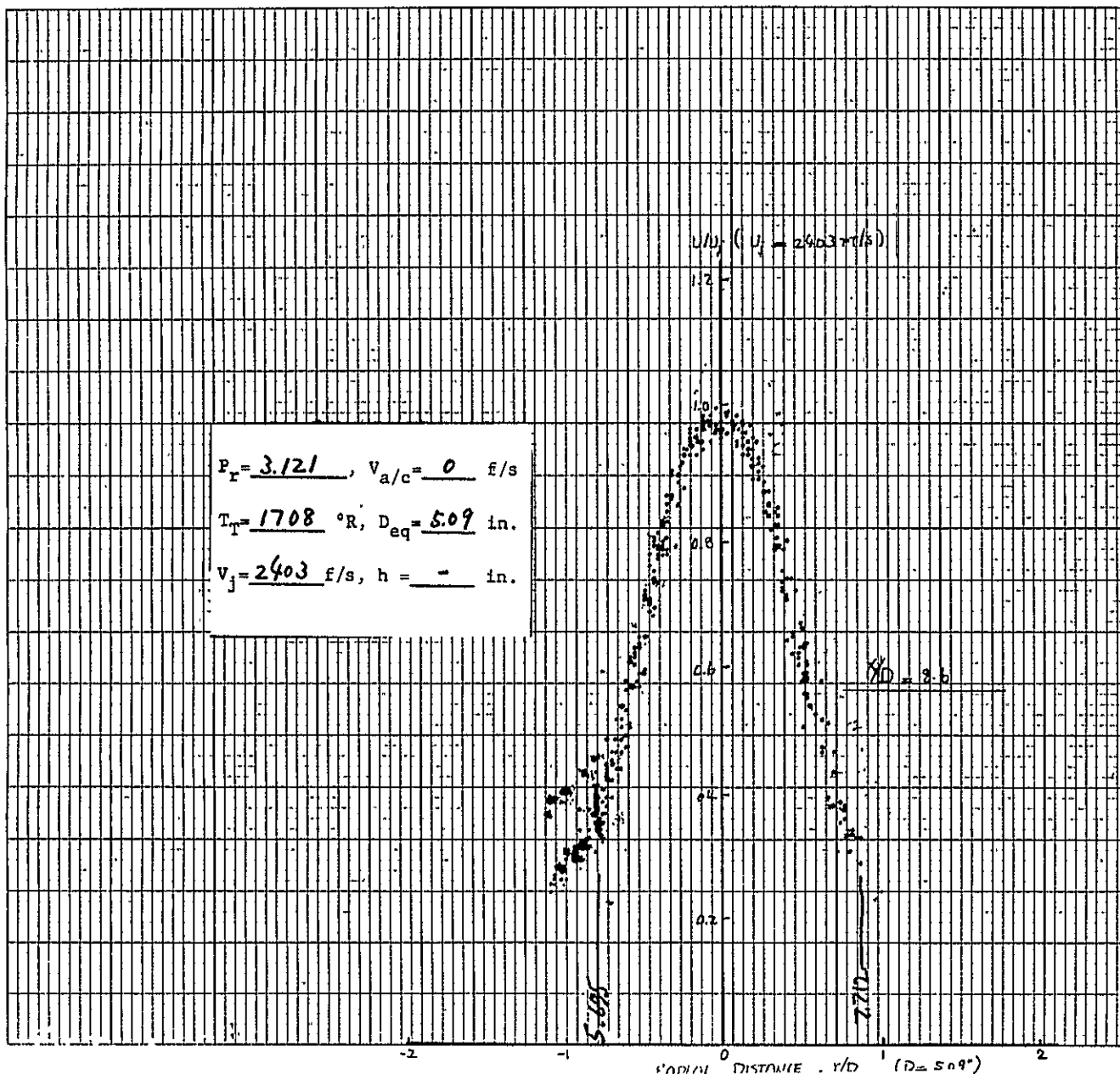
898



H4056
H4055
H4054
H4053
H4052
H4051

DATE: 4/7/82	NOZZLE: #2
TEST POINT: . L.V. - ; ACOUSTIC - 213	
PLOT IDENTIFICATION: ' G - 4032	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS' TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (.) - VOLTS $\frac{X}{D}$	$\frac{X}{D} = 86$
LOCATIONS' TRAVERSE - VOLTS $\frac{X}{D}$	$\frac{X}{D} = 86$
SCALE : X-AXIS= 2.33	INCH/UNIT
Y-AXIS= 375	F.P.S./UNIT
HISTOGRAMS: H- 4051 TO H- 4056	
<p>LINE OF W TRAVERSE</p>	

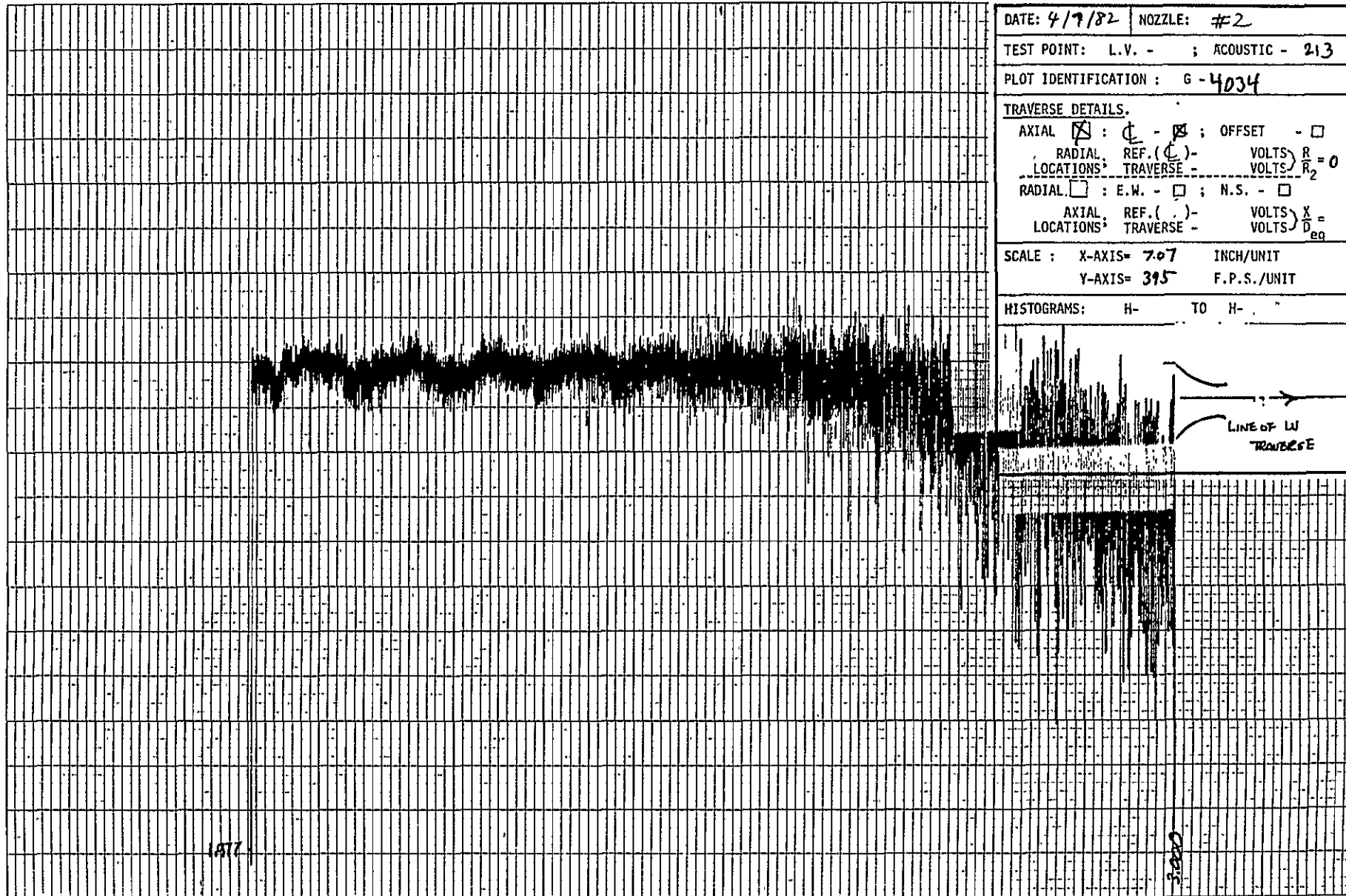
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DATE: 4/7/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 213	
PLOT IDENTIFICATION: G-4033	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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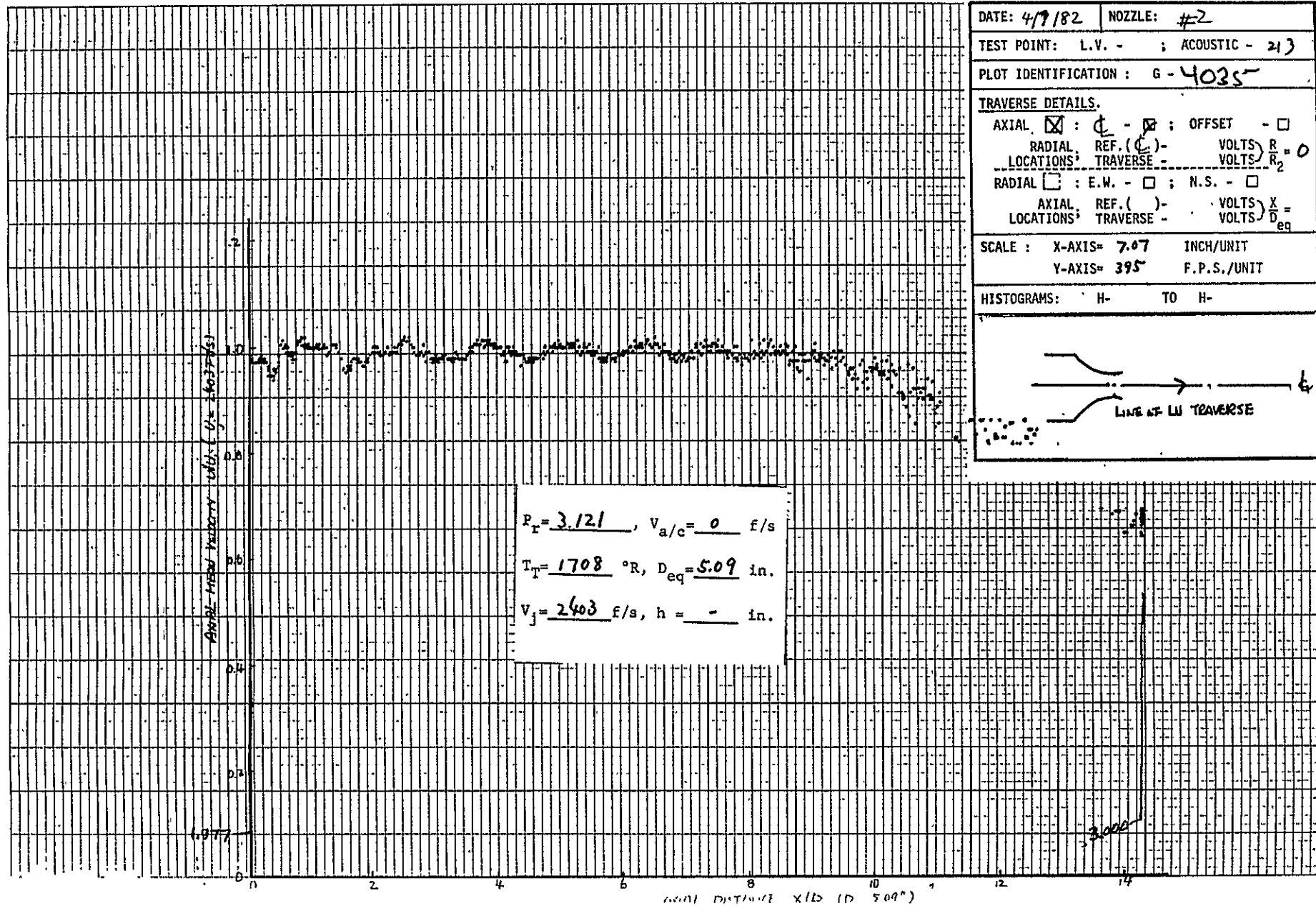
871



DATE: 4/9/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 213	
PLOT IDENTIFICATION: G-4034	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 0$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (.) - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

LINE OF W
TRAVERSE

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1011 AX No.

874

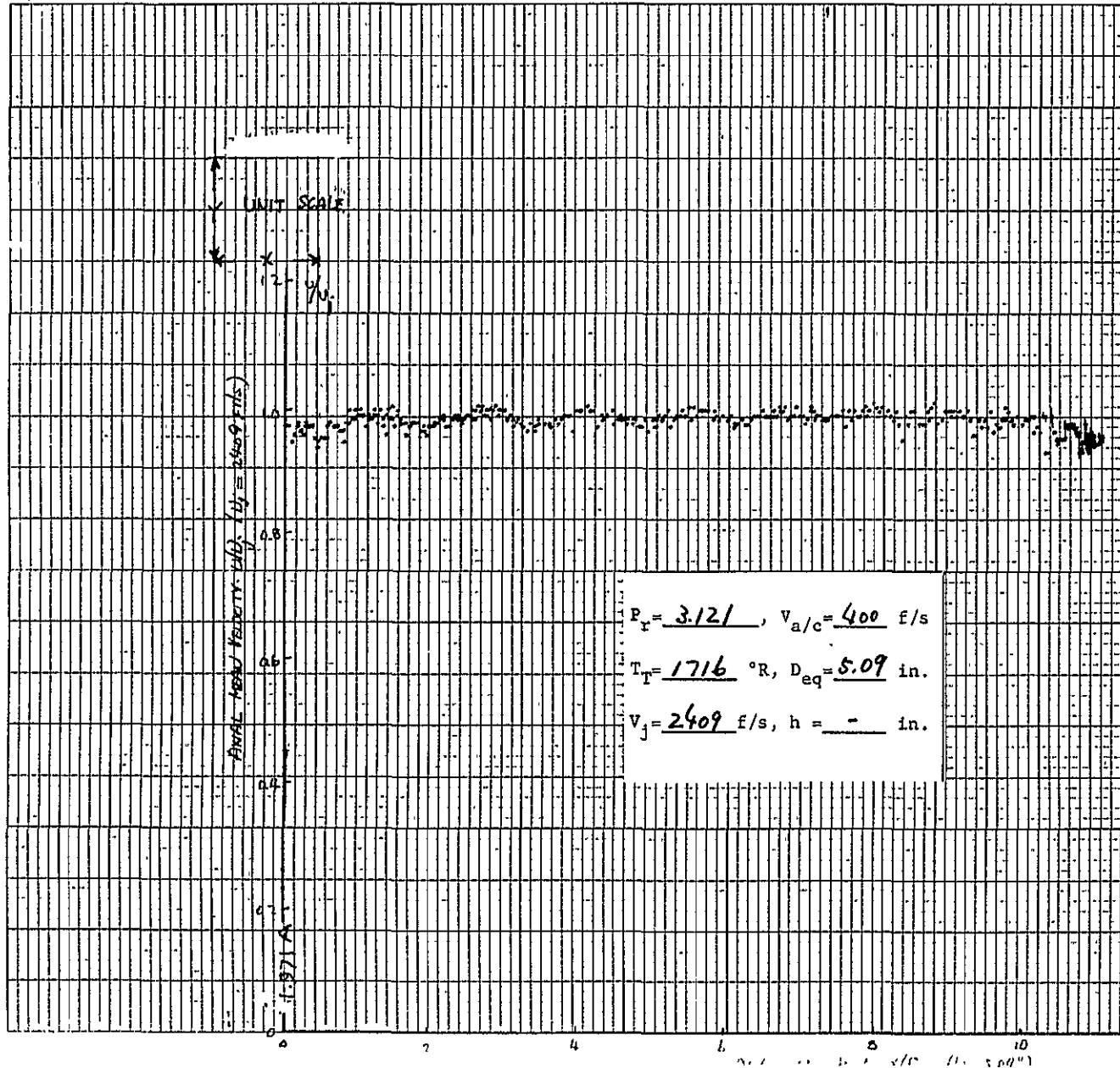
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BUFFALO, NEW YORK
GALVANOMETER CORPORATION
ELECTRO-TECHNICAL

1971A

4036

DATE: 4/8/82	NOZZLE: # 2
TEST POINT: L.V. - ; ACOUSTIC - 24	
PLOT IDENTIFICATION: G-4036	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 0$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}} =$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 7.07	INCH/UNIT
Y-AXIS= 395	F.P.S./UNIT
HISTOGRAMS: H-	TO H-

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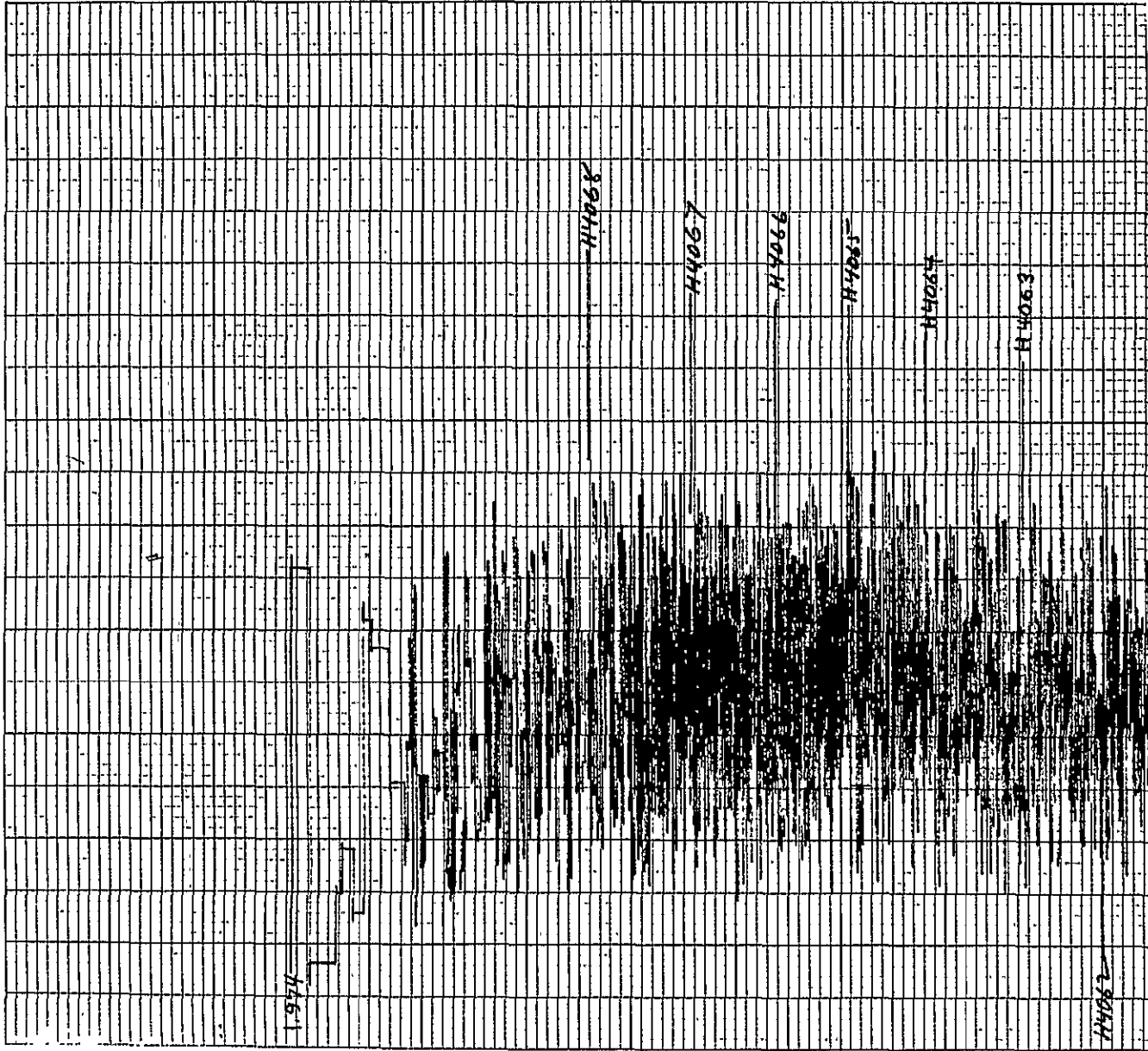


$P_T = 3.121$, $V_{a/c} = 400$ f/s

$T_T = 1716$ °R, $D_{eq} = 5.09$ in.

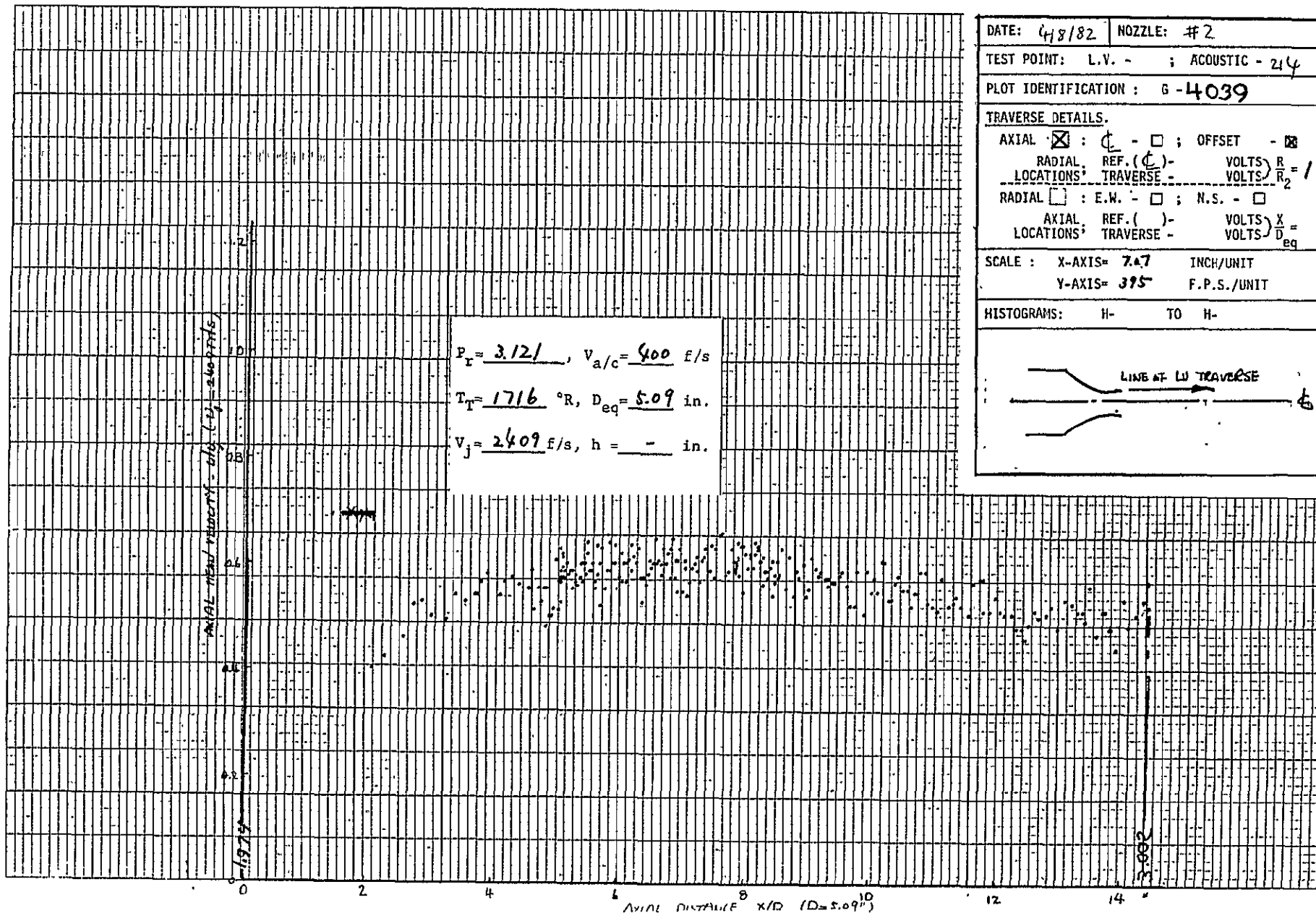
$V_j = 2409$ f/s, $h = -$ in.

DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 214	
PLOT IDENTIFICATION: G-4037	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; .OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	$R_2 = 0$
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	D_{eq}
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 404 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 214
PLOT IDENTIFICATION: G - 4038	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 1$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D} =$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 7.07	INCH/UNIT
Y-AXIS= 395	F.P.S./UNIT
HISTOGRAMS: H-4063 TO H-4068	

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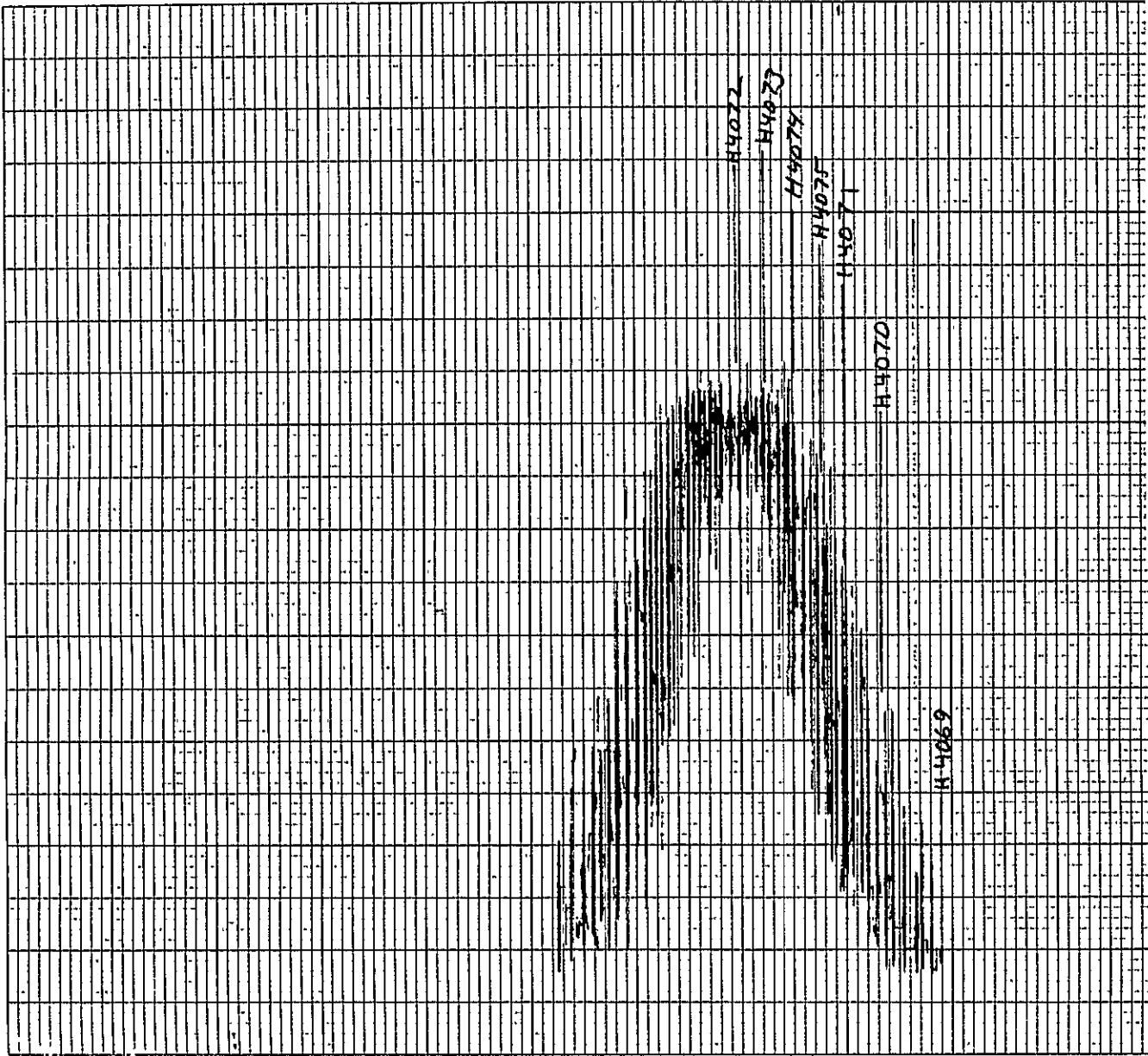
DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 214	
PLOT IDENTIFICATION: G-4039	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 1$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE: X-AXIS= 7.47 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

C-4

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878

NO XY 1101



DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 214
PLOT IDENTIFICATION: G-4040	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ;	OFFSET - <input type="checkbox"/>
RADIAL, REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS, TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ;	N.S. - <input type="checkbox"/>
AXIAL, REF. (ϕ) -	VOLTS $\frac{X}{D}$
LOCATIONS, TRAVERSE -	VOLTS $\frac{X}{D}$
SCALE : X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H-4069 TO H-4072	

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873

$$P_r = 3.121, V_{a/c} = 400 \text{ f/s}$$

$$T_r = 1716^\circ R, D_{eq} = 5.09 \text{ in.}$$

$$V_j = 2409 \text{ f/s, } h = \text{---} \text{ in.}$$

$$1/0_1 (V_j) = 2409 \text{ f/s}$$

0.2

0.3

0.4

0.6

0.4

0.2

$$1/0 = 0.7$$

DATE: 418182 NOZZLE: #2

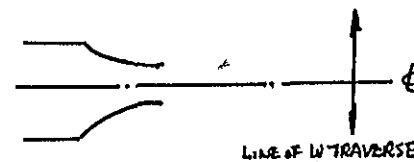
TEST POINT: L.V. - ; ACOUSTIC - 214

PLOT IDENTIFICATION : G - 4041

TRAVERSE DETAILS.

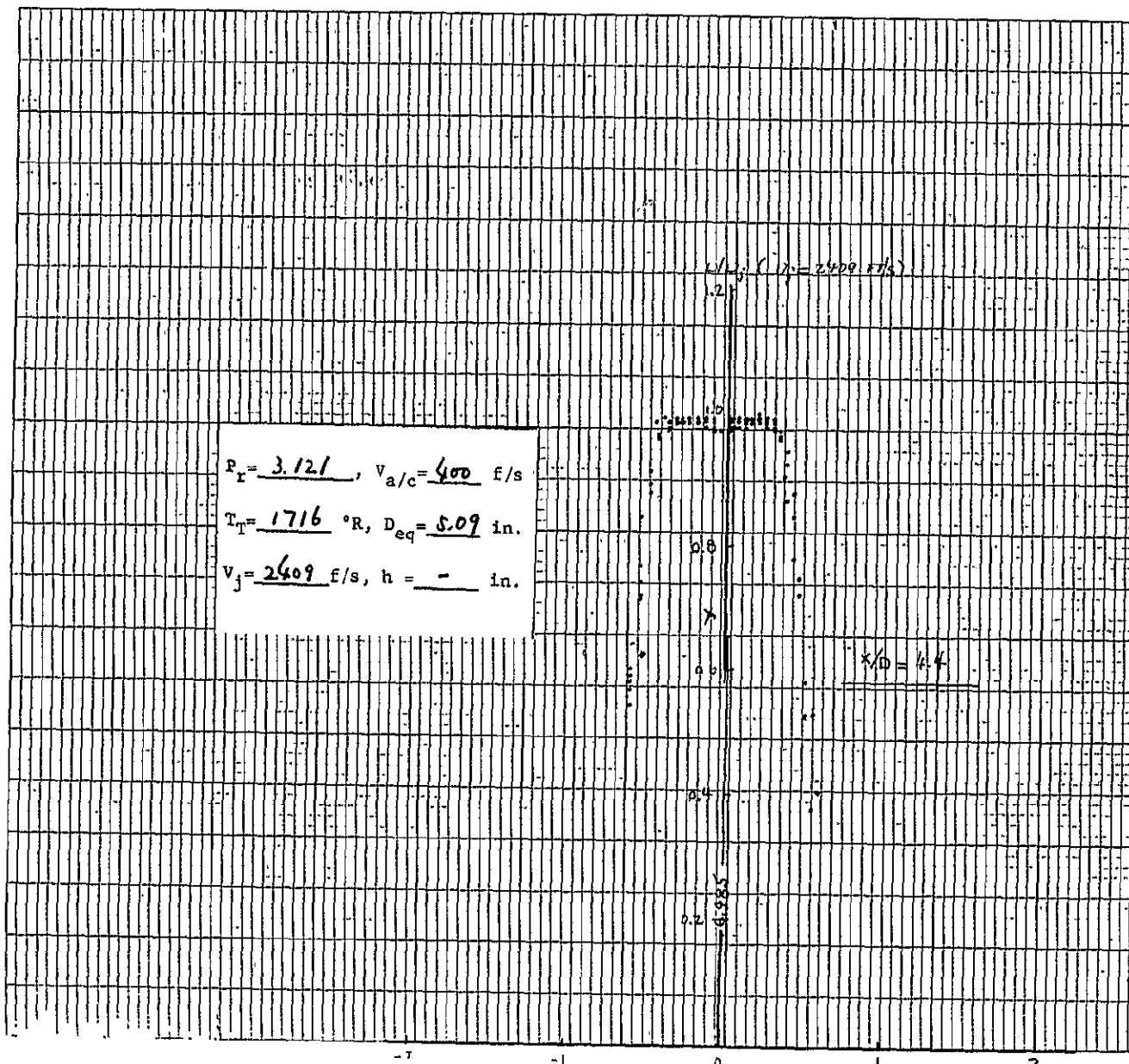
AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} =$ LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2} =$ RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS $\frac{X}{D_{eq}} = 0.7$ LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}} =$ SCALE : X-AXIS= 3.33 INCH/UNIT
Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



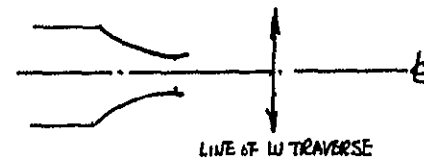
DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 214	
PLOT IDENTIFICATION: G-4042	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} =$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2} =$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D} = 44$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D} = 44$
SCALE: X-AXIS= 3.33 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

881



$R_r = 3.121$, $v_{a/c} = 400$ F/s
 $T_T = 1716$ °R, $D_{eq} = 5.09$ in.
 $v_j = 2409$ F/s, $h = -$ in.

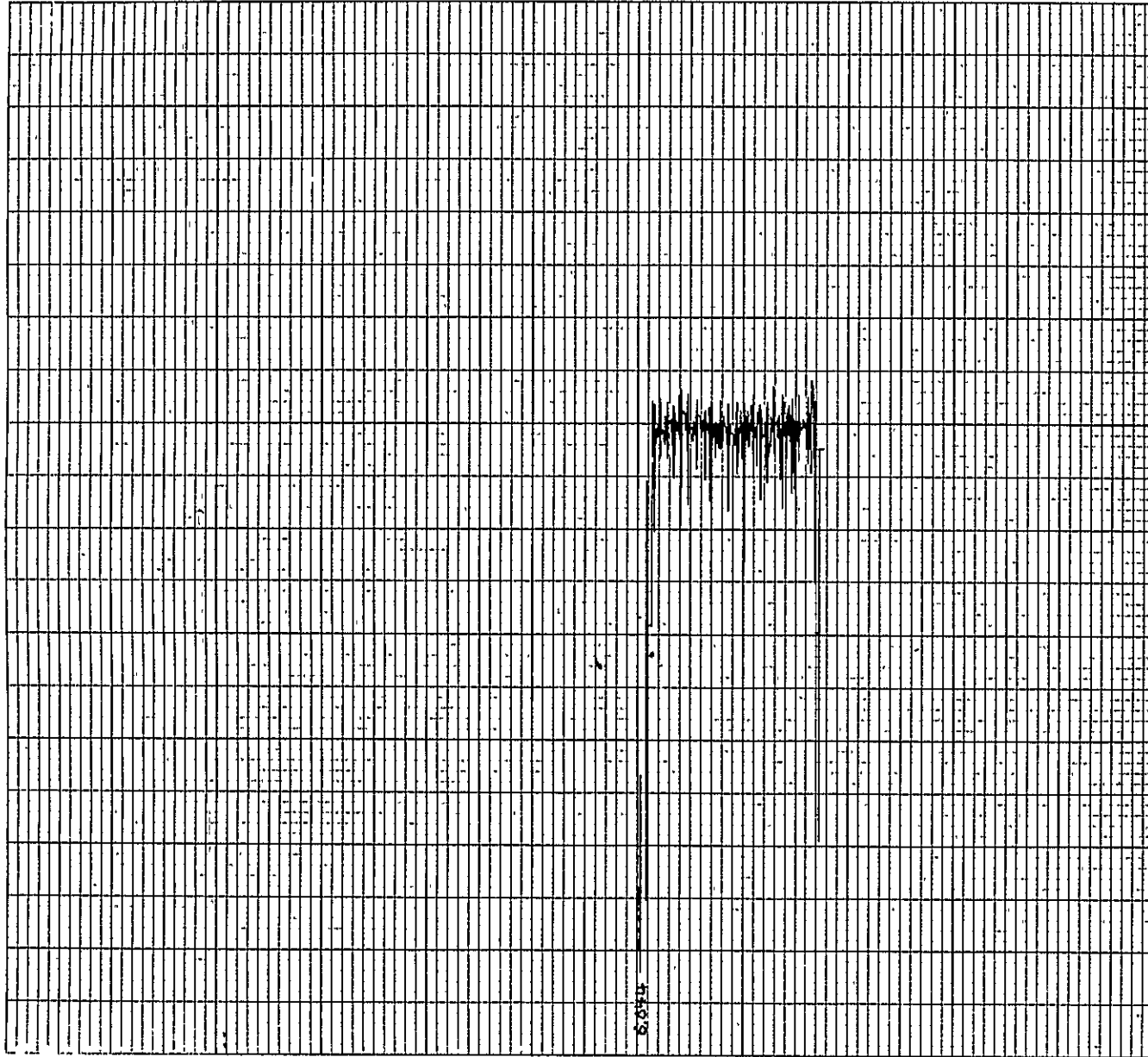
DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 214	
PLOT IDENTIFICATION: G - 4043	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	4.4
SCALE: X-AXIS= 3.33	INCH/UNIT
Y-AXIS= 375	F.P.S./UNIT
HISTOGRAMS: H- TO H-	



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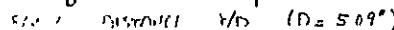
882

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DATE: 4/8/62	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 214
PLOT IDENTIFICATION: G - 4044	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D} = 1.2$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D} = 1.2$
SCALE : X-AXIS= 3.33	INCH/UNIT
Y-AXIS= 395	F.P.S./UNIT
HISTOGRAMS: H-	TO H-

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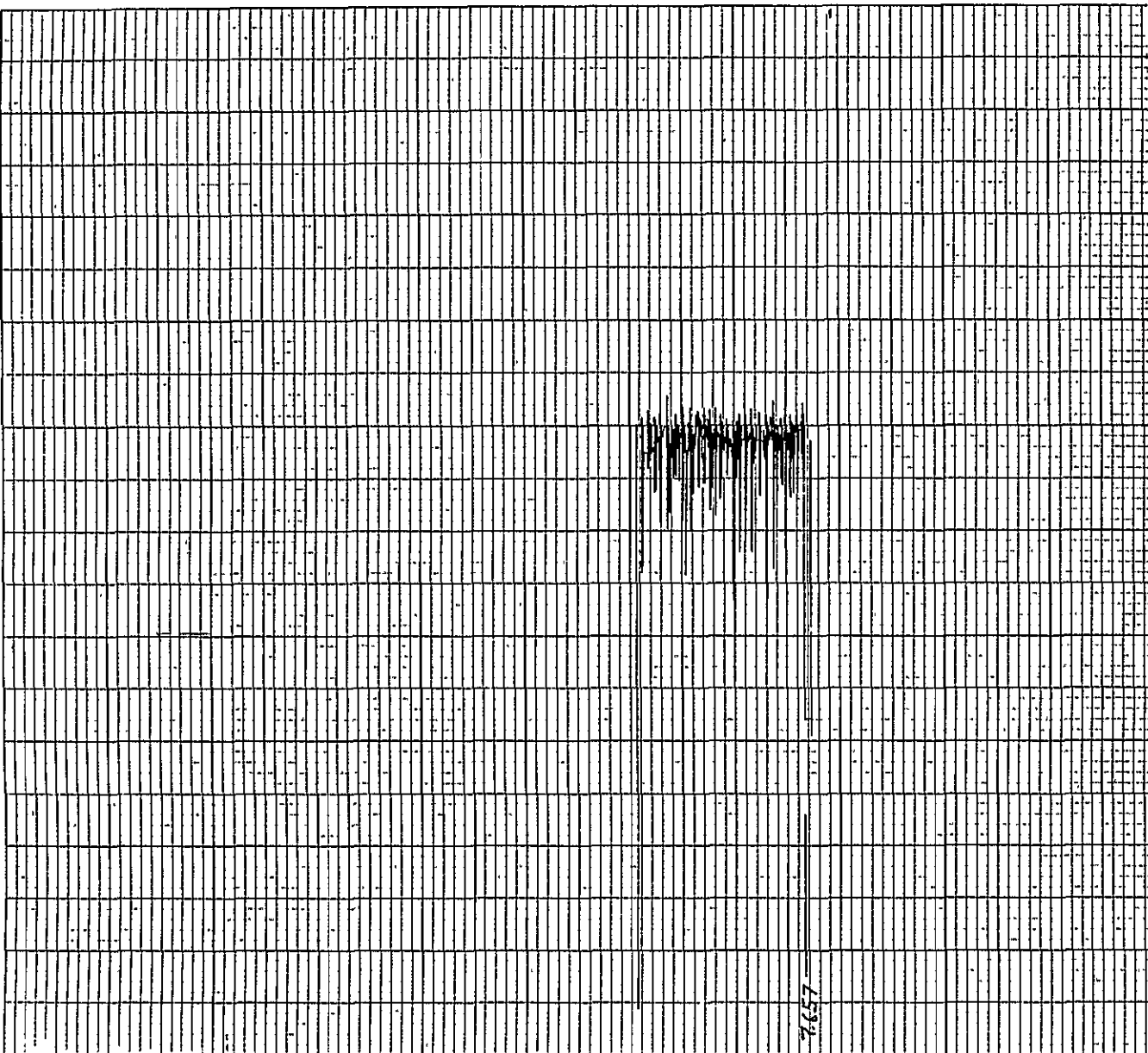


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NO XY 1101X

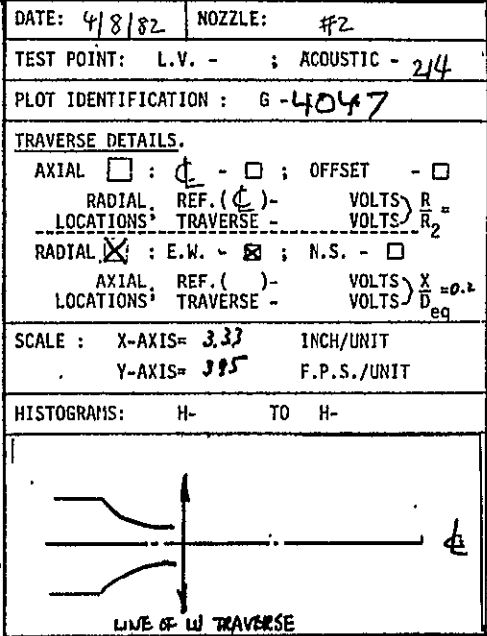
884

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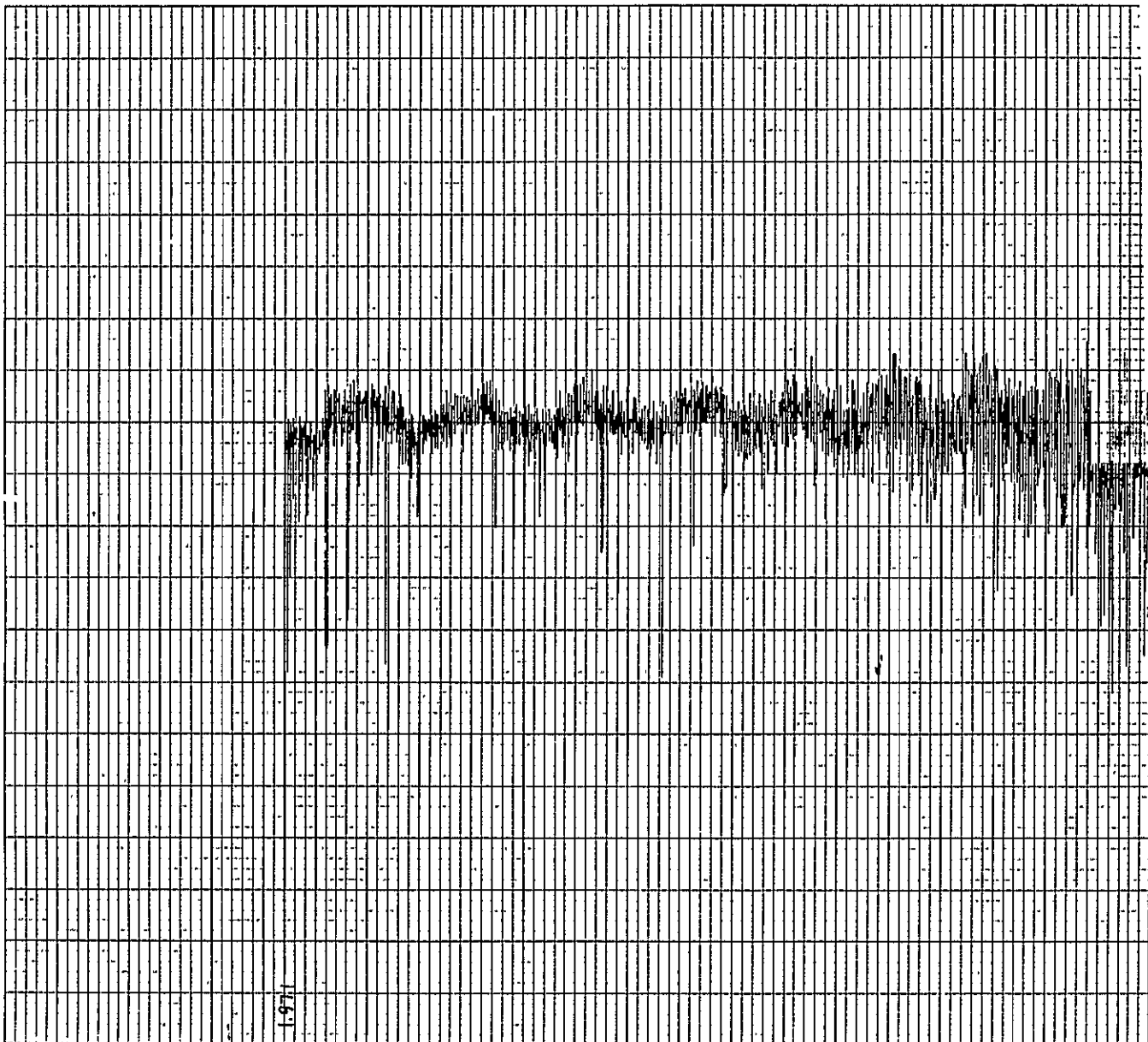
DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 214
PLOT IDENTIFICATION: G-4046	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}} = 0.2$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.3	INCH/UNIT
Y-AXIS= 395	F.P.S./UNIT
HISTOGRAMS: H-	TO H-
<p>LINE OF LV TRAVERSE</p>	

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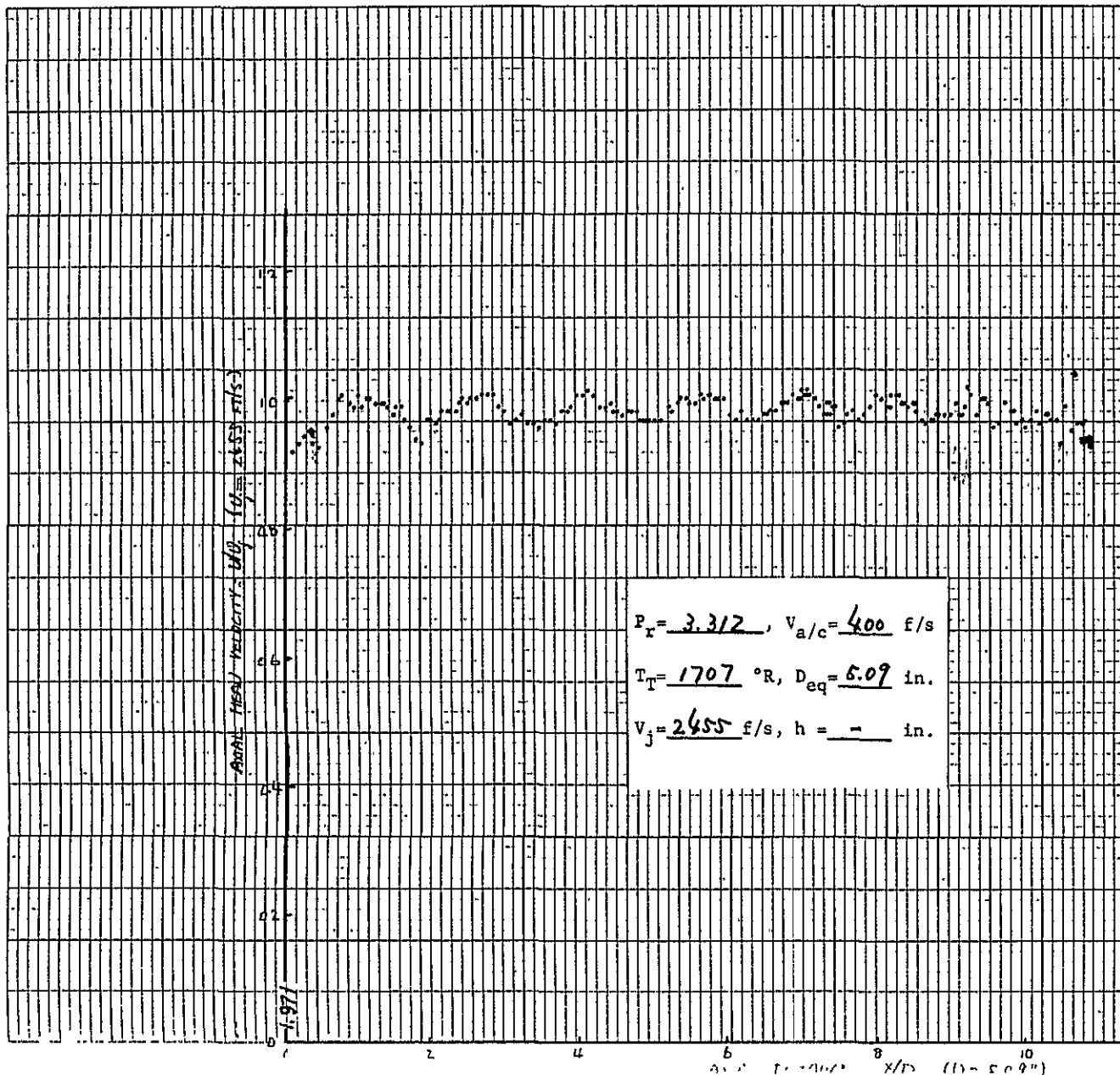
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Model 2
Test Point 222



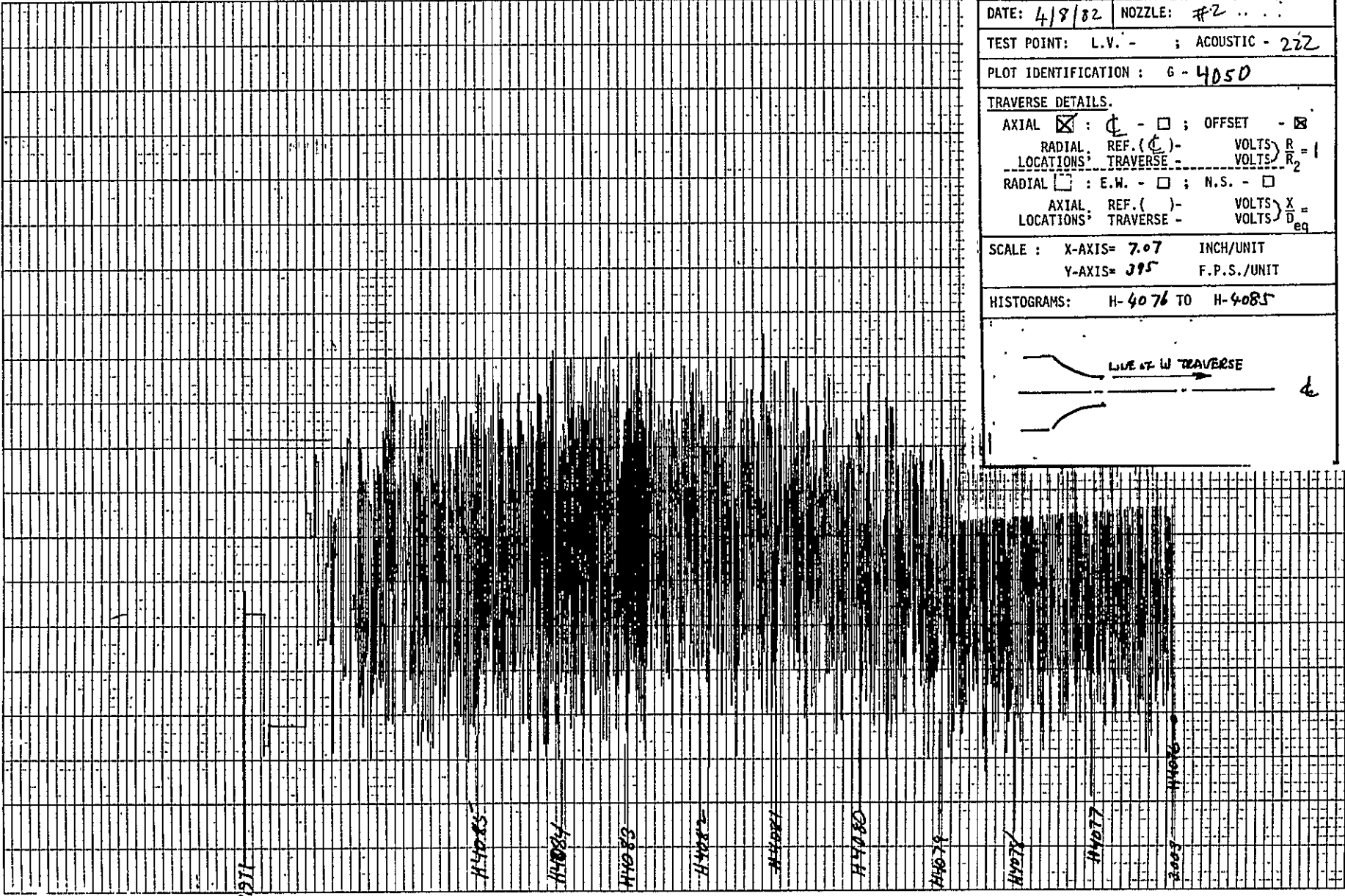
DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 222	
PLOT IDENTIFICATION: G - 4048	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 0$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 7.07 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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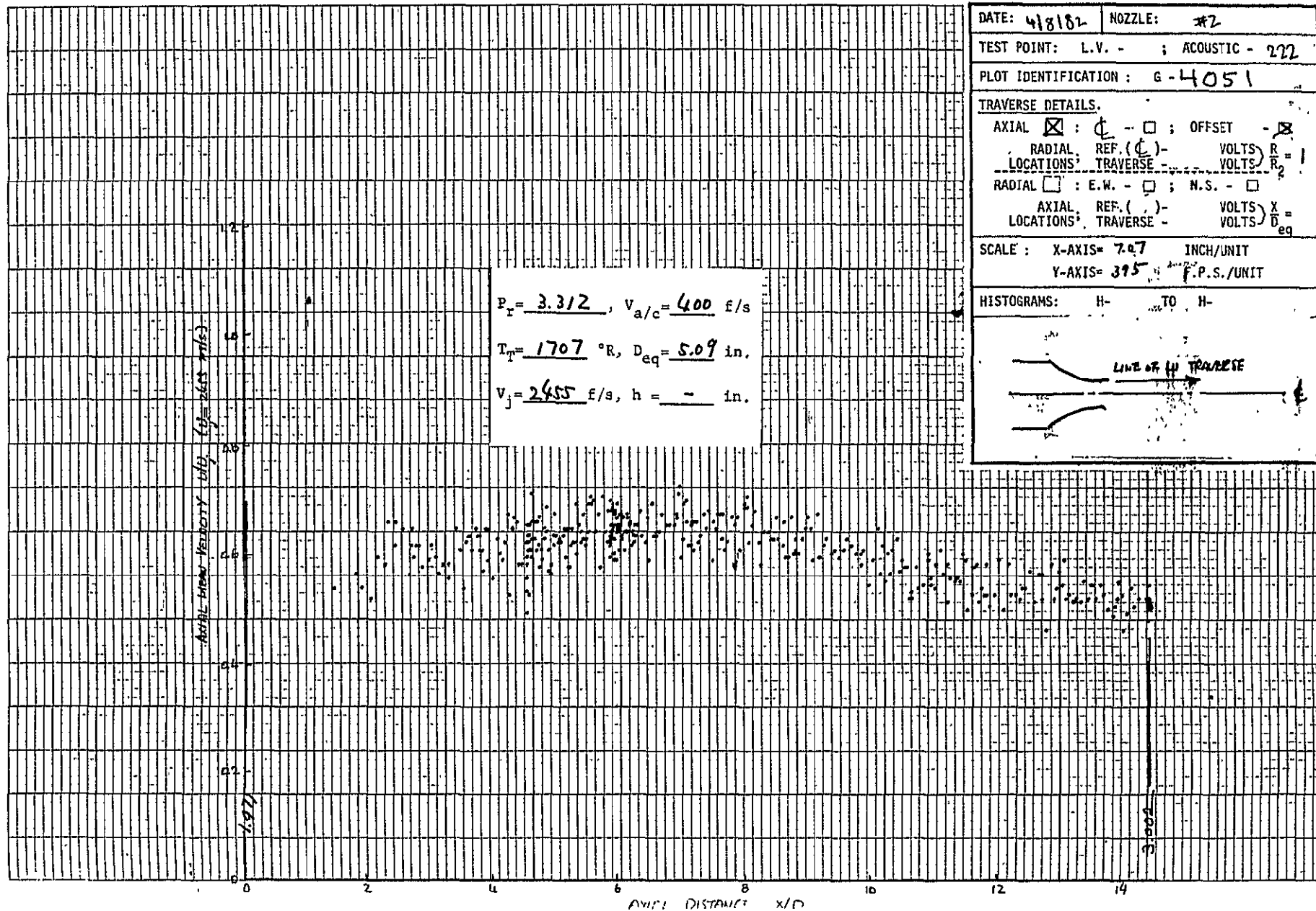
$P_r = 3.312$, $V_{a/c} = 400$ f/s
 $T_T = 1707$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2455$ f/s, $h = -$ in.

DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 222	
PLOT IDENTIFICATION: G-4049	
TRAVERSE DETAILS:	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL \star : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.47 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. -	ACOUSTIC - 222
PLOT IDENTIFICATION: 6-4050	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ;	OFFSET - <input checked="" type="checkbox"/>
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - \square ;	N.S. - \square
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.07	INCH/UNIT
Y-AXIS= 395	F.P.S./UNIT
HISTOGRAMS: H-4076 TO H-4085	

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$P_r = 3.312$, $V_{a/c} = 400$ f/s

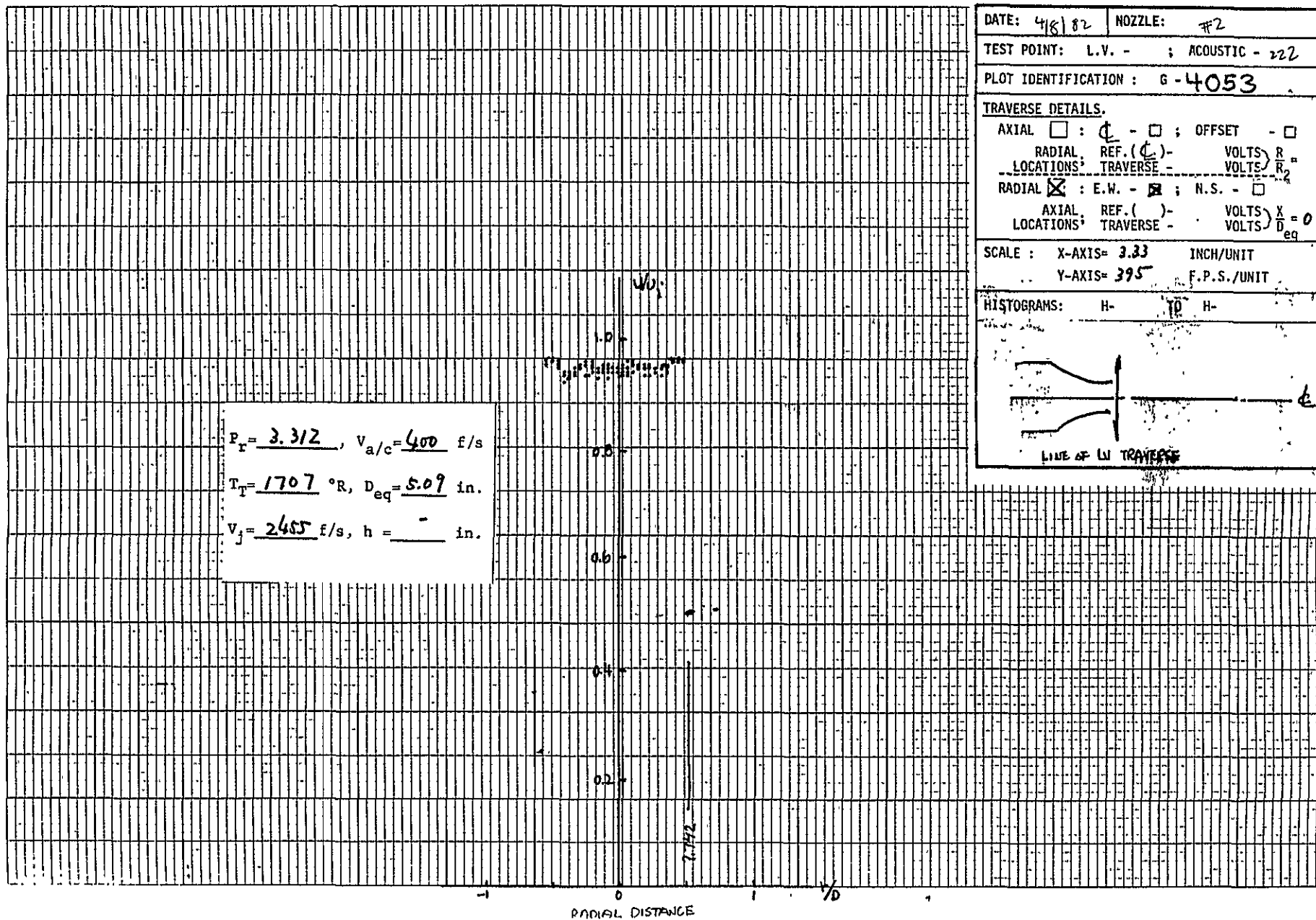
$T_r = 1707$ °R, $D_{eq} = 5.09$ in.

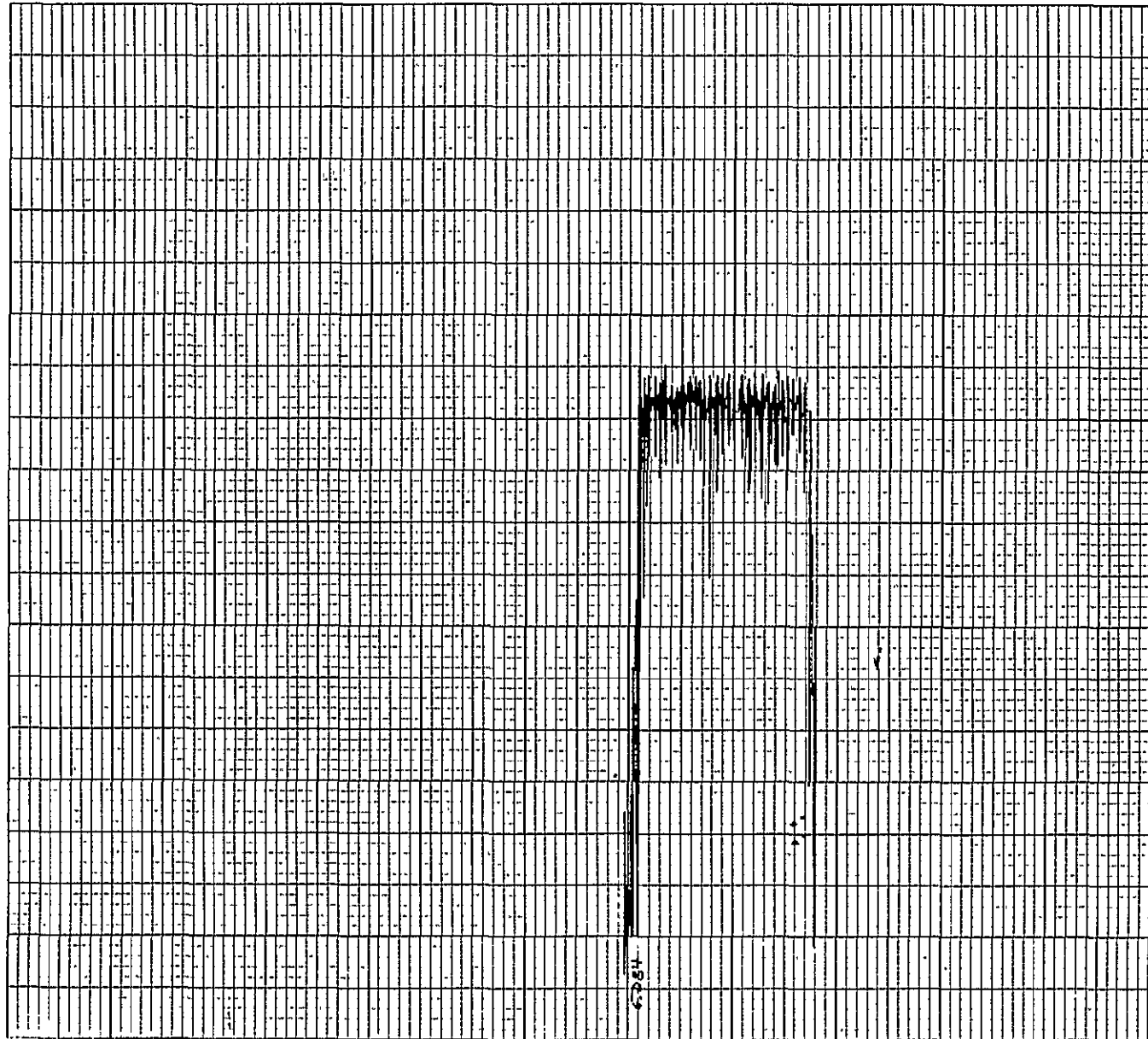
$V_j = 2455$ f/s, $h = -$ in.

DATE: 4/8/82	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 222	
PLOT IDENTIFICATION: G-4051	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - \square ; N.S. - \square	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.27 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

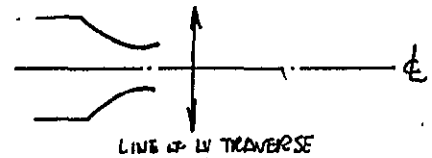
DATE: 4/8/52	NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 222	
PLOT IDENTIFICATION: G-4052	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.3 INCH/UNIT	
Y-AXIS= 3.5 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

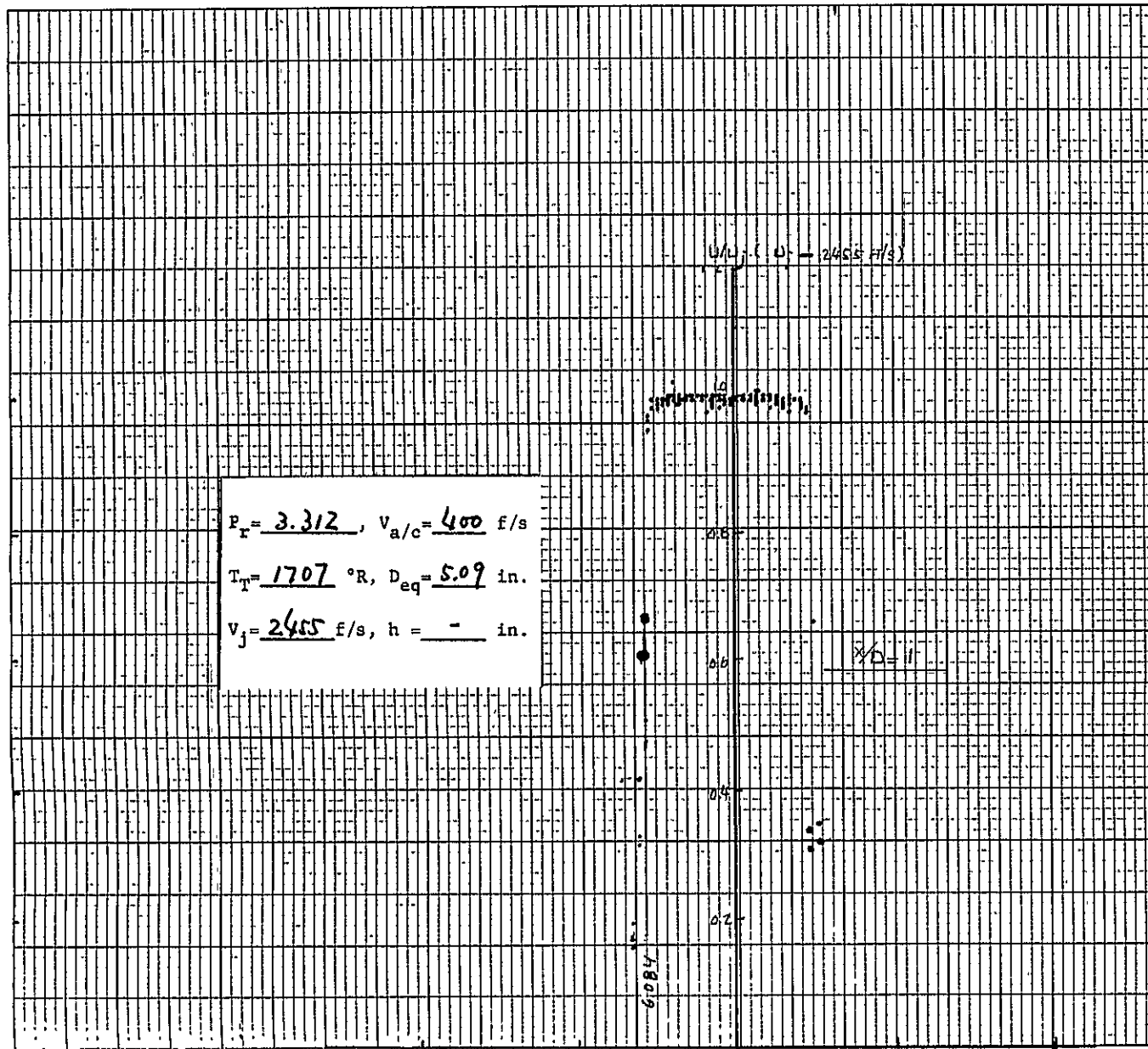
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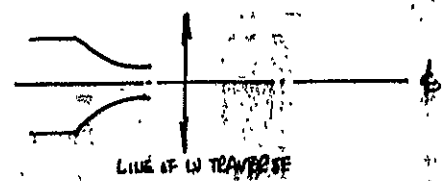
DATE: 4/8/82 NOZZLE: #2
TEST POINT: L.V. - ; ACOUSTIC - 222
PLOT IDENTIFICATION: G-4054
TRAVERSE DETAILS.
AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
RADIAL, REF. (ϕ) - VOLTS $\frac{R}{R_2}$
LOCATIONS, TRAVERSE - VOLTS $\frac{R_2}{R}$
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL, REF. () - VOLTS $\frac{X}{D_{eq}}$
LOCATIONS, TRAVERSE - VOLTS $\frac{D_{eq}}{X}$
SCALE: X-AXIS= 3.33 INCH/UNIT
Y-AXIS= 39.5 F.P.S./UNIT
HISTOGRAMS: H- TO H-



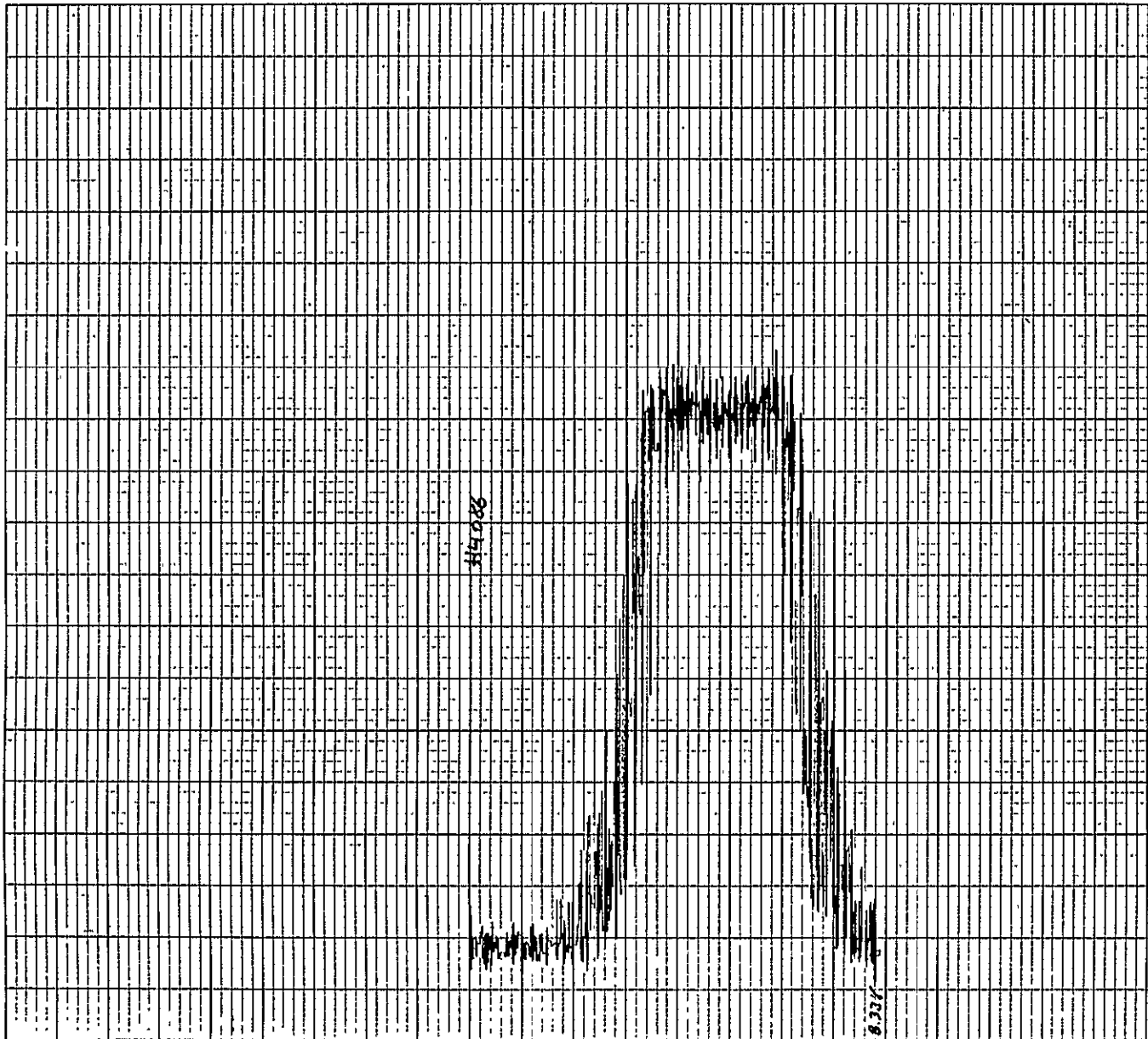


$P_r = 3.312$, $V_{a/c} = 400$ f/s
 $T_T = 1707$ °R, $D_{eq} = 5.09$ in.
 $V_j = 2455$ f/s, $h = -$ in.

DATE: 4/8/82 NOZZLE: #2
 TEST POINT: L.V. - ; ACOUSTIC - 272
 PLOT IDENTIFICATION: G-4055
 TRAVERSE DETAILS:
 AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (C) : VOLTS R_1
 LOCATIONS: TRAVERSE : VOLTS R_2
 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
 AXIAL REF. () : VOLTS X
 LOCATIONS: TRAVERSE : VOLTS D_{eq}
 SCALE: X-AXIS= 3.33 INCH/UNIT
 Y-AXIS= 395 F.P.S./UNIT
 HISTOGRAMS: H- TO H-



895



DATE: 4/8/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 222

PLOT IDENTIFICATION: G - 4056

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

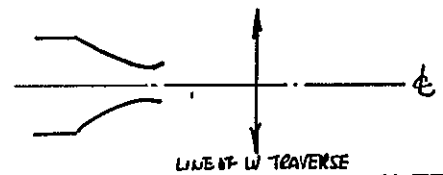
AXIAL REF. () - VOLTS X_{eq}

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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$P_r = 3.312$, $v_{a/c} = 400$ f/s

 $T_r = 1707$ °R, $D_{eq} = 5.09$ in.

 $v_j = 2655$ f/s, $h = -$ in.

 $v_j (v_j = 2655 \text{ f/s})$

DATE: 4/8/82 NOZZLE: #2

TEST POINT: L.V. - ACOUSTIC - 277

PLOT IDENTIFICATION: G-4057

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

HISTOGRAMS: H- H-



VD-43

HISTOGRAM NUMBERS AND
RADIAL LOCATION OF MEASUREMENTSH4087
H4090
H4089
H4088
H4087

AXIAL LOCATION

3.35 F.S.

2.33"

Inches of Travel (RADIAL DISTANCE)

DATE: 4/8/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 222

PLOT IDENTIFICATION: G-4058

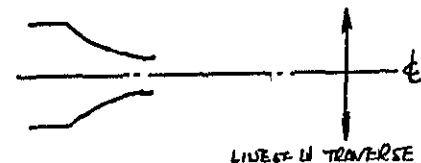
TRAVERSE DETAILS

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS $\frac{X}{X_{eq}}$
LOCATIONS TRAVERSE - VOLTS $\frac{X}{X_{eq}}$

SCALE: X-AXIS= 2.33 INCH/UNIT

Y-AXIS= 375 F.P.S./UNIT

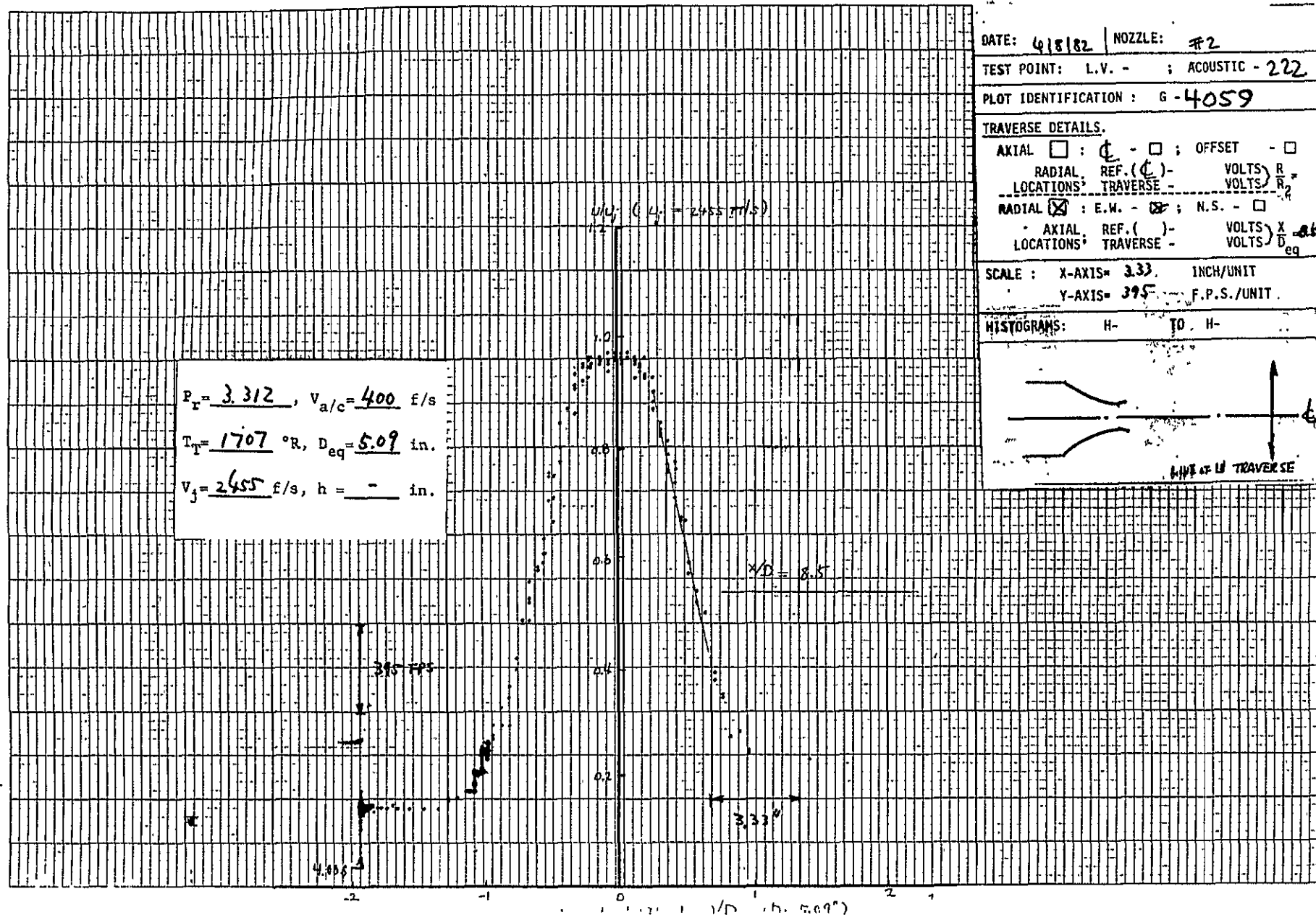
HISTOGRAMS: H-4087 TO H-4091



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DATE: 4/8/82 NOZZLE: #2

TEST POINT: L.V. - ; ACOUSTIC - 222

PLOT IDENTIFICATION: G-4059

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. () - VOLTS X

LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.33 INCH/UNIT

Y-AXIS= 395 F.P.S./UNIT

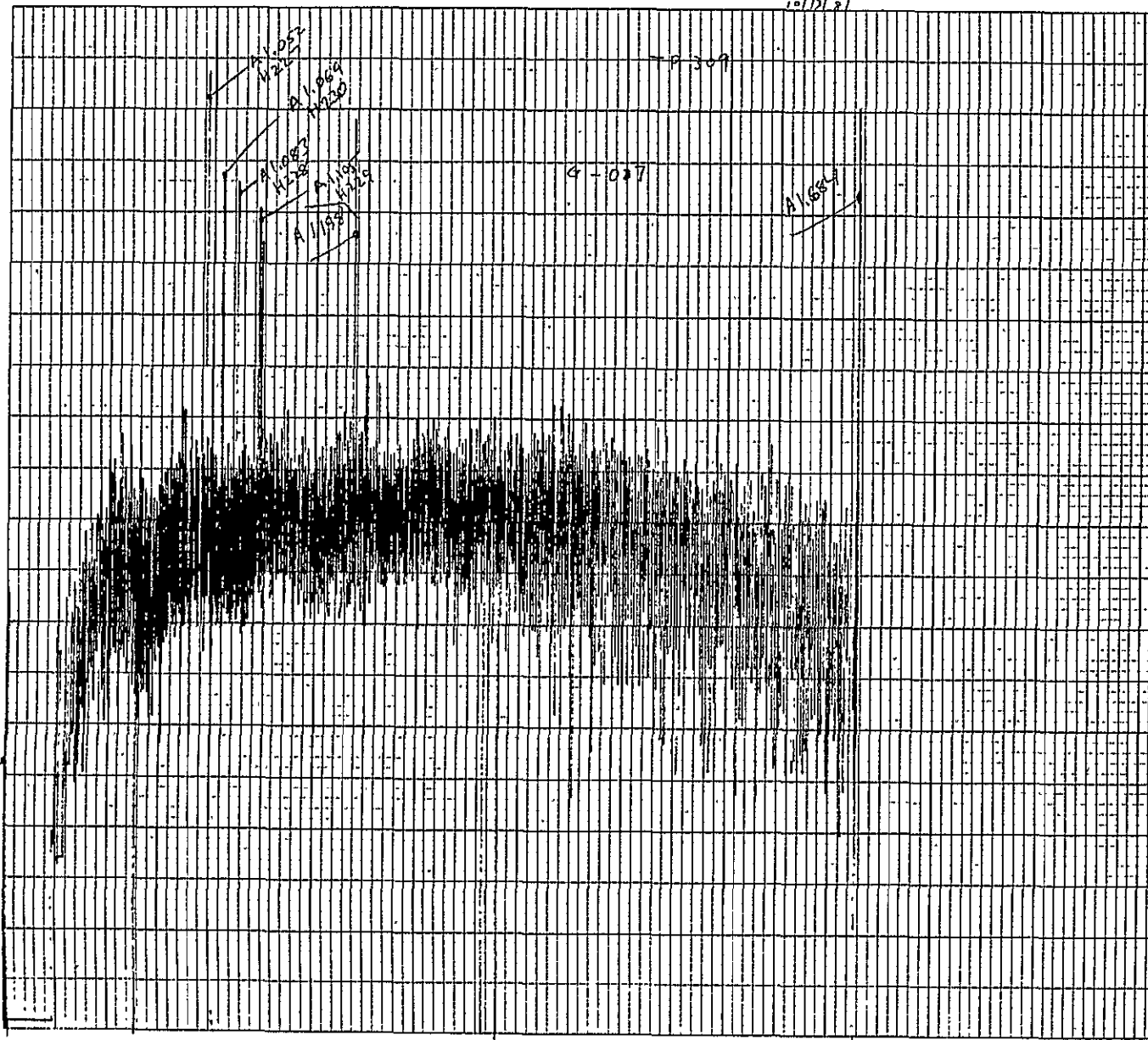
HISTOGRAMS: H- TO H-



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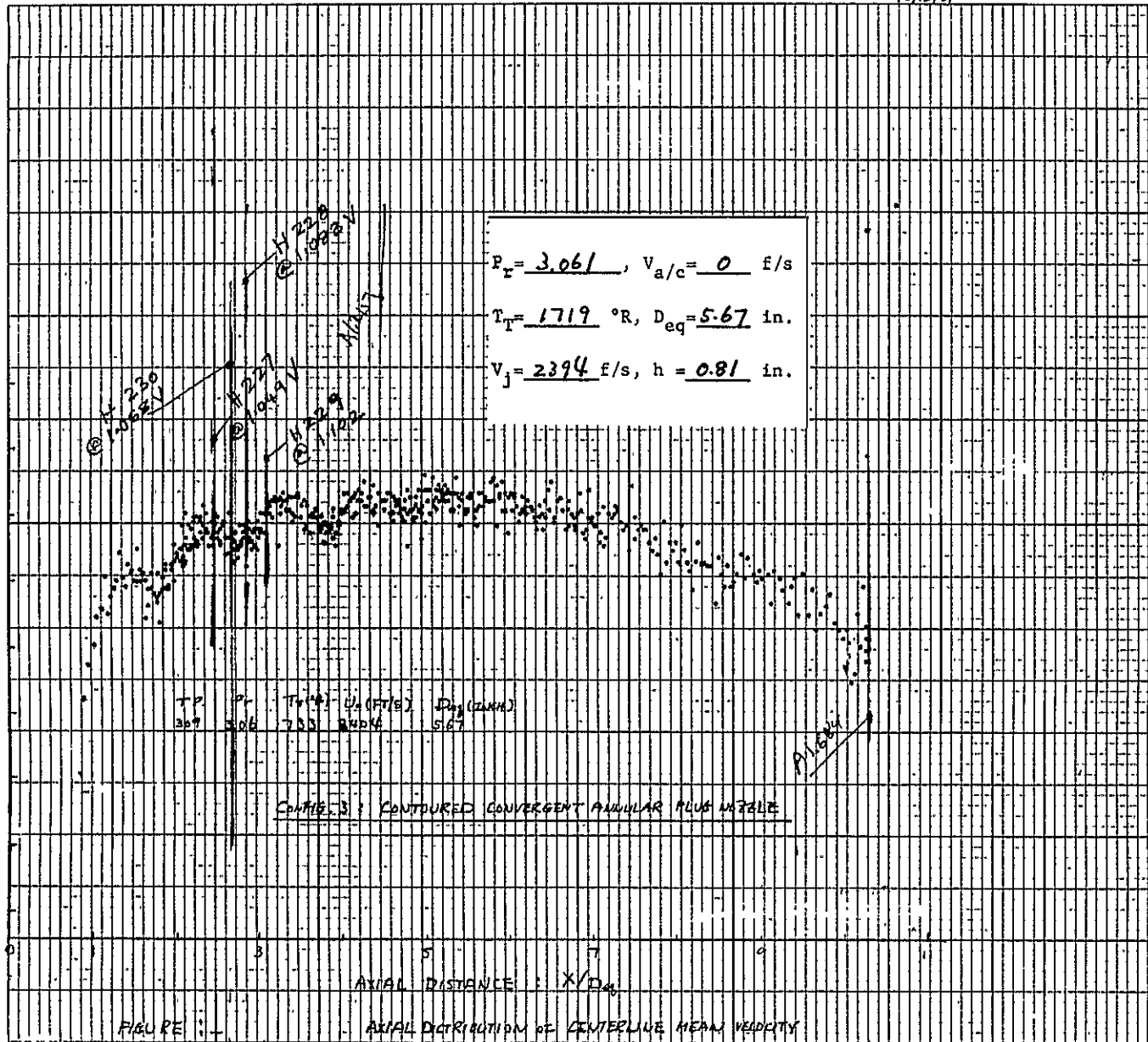
A 10/13/81



DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 309	
PLOT IDENTIFICATION: G - 87	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) - VOLTS R_1	LOCATIONS: TRAVERSE - VOLTS R_2
RADIAL \square : E.W. - \square ; N.S. - \square	
AXIAL REF. () - VOLTS X	LOCATIONS: TRAVERSE - VOLTS D_{eq}
SCALE : X-AXIS= 7.0" INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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AXIAL MEAN VELOCITY: U_{10}



10/13/81

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 309
PLOT IDENTIFICATION: G - 88	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS $R = 0$	
LOCATIONS: TRAVERSE - VOLTS $R = 0$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (C) - VOLTS $X = 0$	
LOCATIONS: TRAVERSE - VOLTS $X = 0$	
SCALE: X-AXIS = 7.08 INCH/UNIT	
Y-AXIS = 4.18 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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FIGURE 1: AXIAL DISTRIBUTION OF CENTERLINE MEAN VELOCITY IN THE DOWNSTREAM OF CENTER PLUG

5824"

NO XY 1101

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T.P. 309

G-089

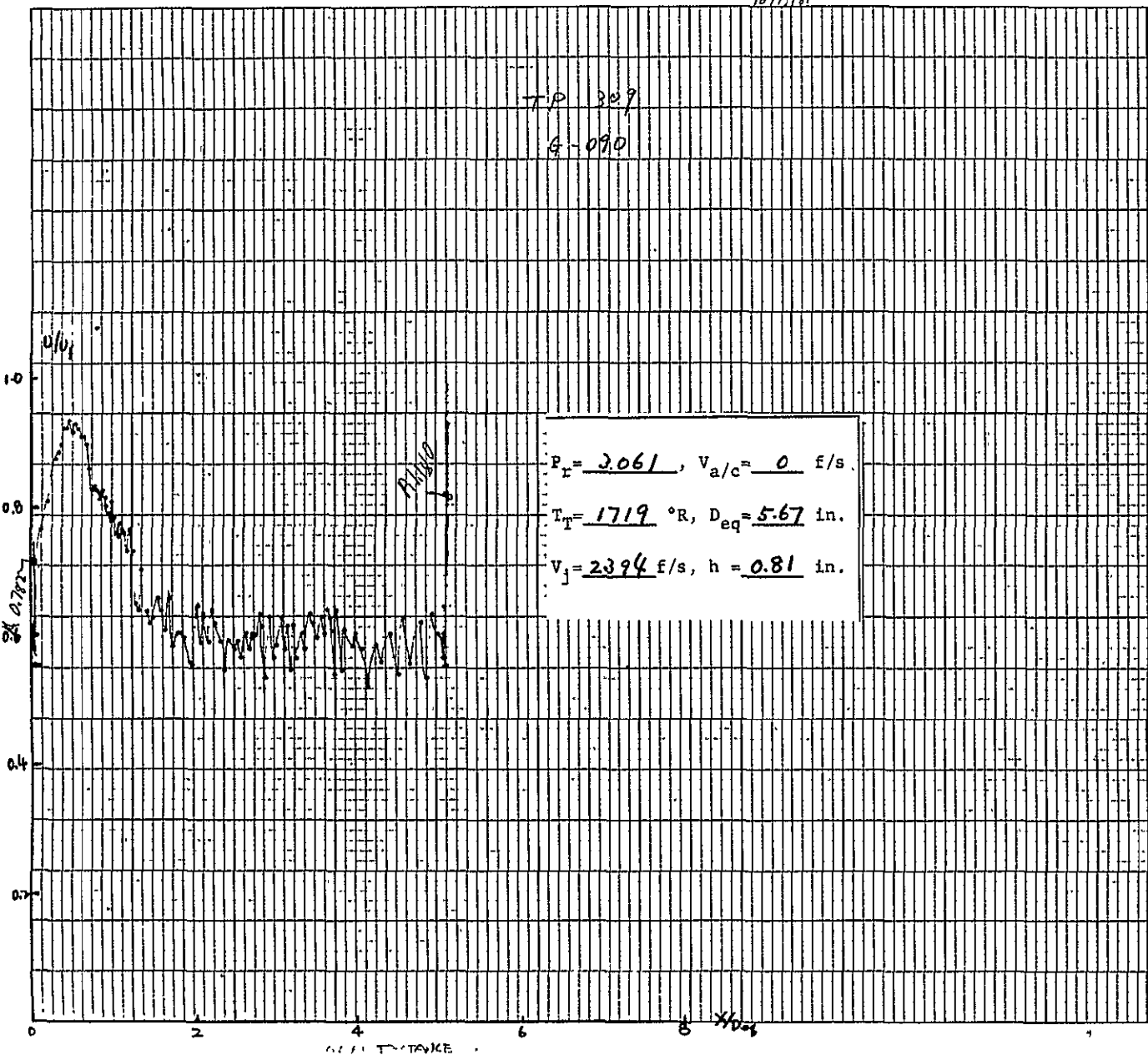
A/180

$\frac{P}{A} \sim 0.5$

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 309	
PLOT IDENTIFICATION: G - 89	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL LOCATIONS: REF. (ϕ) -	VOLTS $\frac{R}{R_2} \sim 1$
TRAVERSE -	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL LOCATIONS: REF. () -	VOLTS $\frac{X}{D} =$
TRAVERSE -	VOLTS $\frac{D}{D_{eq}}$
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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NEW YORK, N.Y.
AXIAL VELOCITY 300



DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 309	
PLOT IDENTIFICATION: G - 90	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS = 2.00 INCH/UNIT	
Y-AXIS = 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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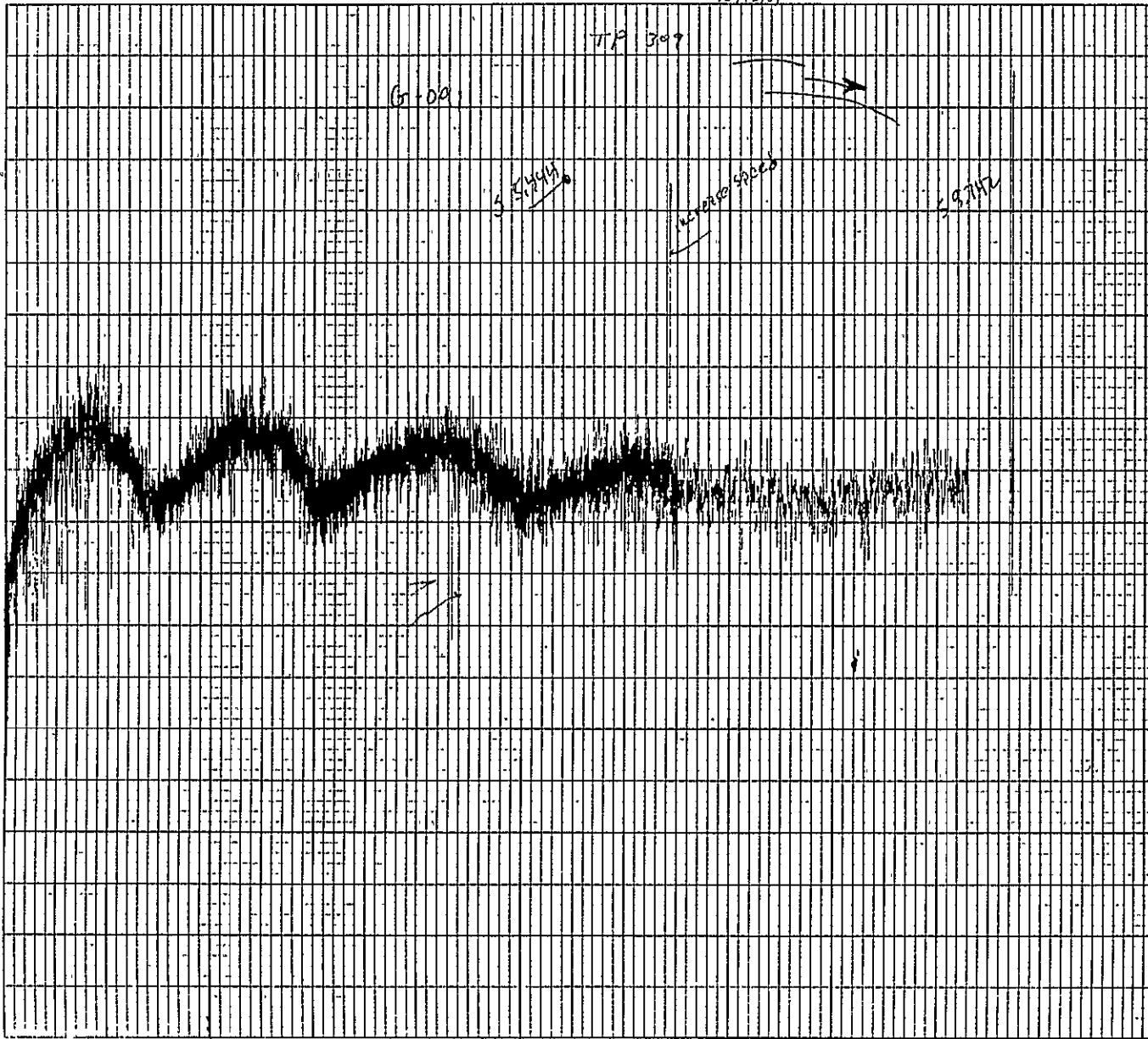
T/P 309

G-00

5.5444

WATER SPEED

5.8742



DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 309	
PLOT IDENTIFICATION: G - 91	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.02 INCH/UNIT	
Y-AXIS= 4/8 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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Q-072
TP 309

AXIAL MEAN VELOCITY U_j/U_0

$P_r = 3061$, $V_{a/c} = 0$ f/s

$T_T = 1719$ °R, $D_{eq} = 5.67$ in.

$V_j = 2394$ f/s, $h = 0.81$ in.

AXIAL DISTANCE: X/D_{eq}

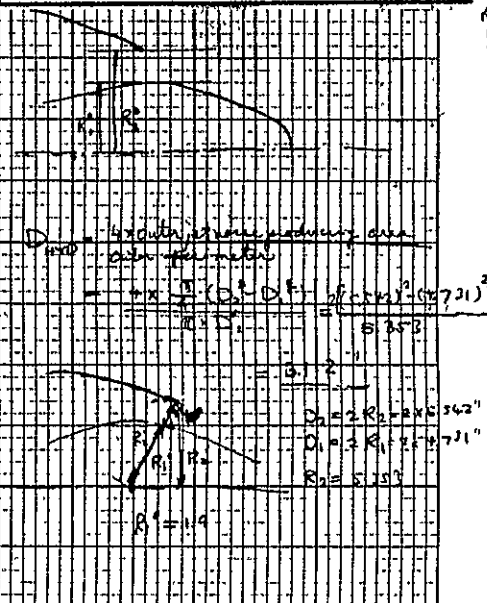
FIGURE

AXIAL DISTRIBUTION OF MEAN VELOCITY PLANE PLUG:

$h = h/2$ (6.2 in. x 1.5), $0.5 X/D_{eq} = 5.7$

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 309
PLOT IDENTIFICATION: G - 92	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (<input checked="" type="checkbox"/>) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.H. <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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907

50047

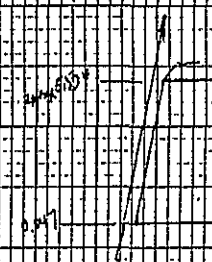
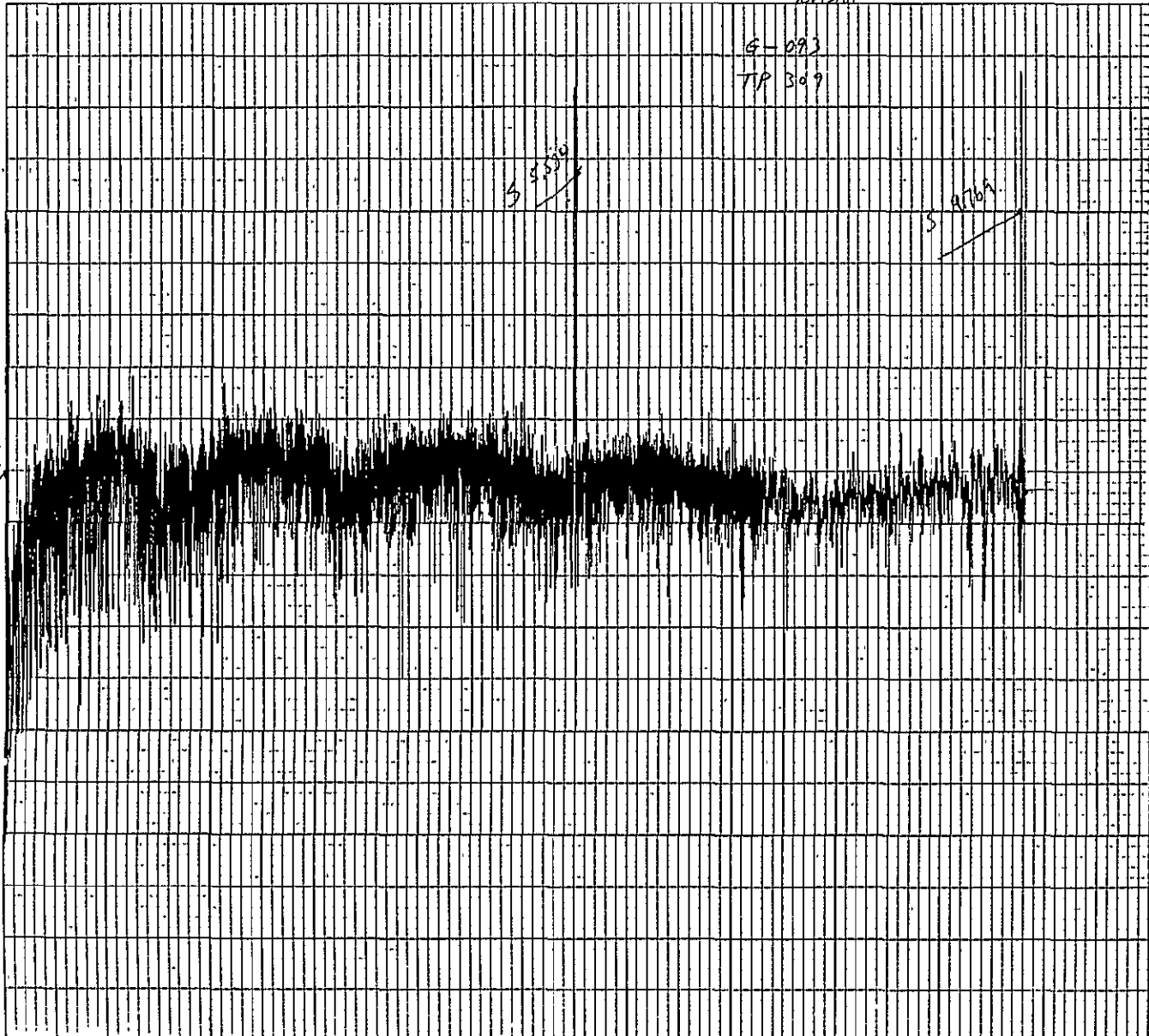
G-093

TP 309

10/12/81

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 309
PLOT IDENTIFICATION: G - 93	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - \square ; N.S. - \square	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
REPEAT OF G-91.	
LINE OF LI TRAVERSE	
ϕ	

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806

NO. XY 1101

6047

10/12/81

G-084

TP 309

DATE: 10/12/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 309
PLOT IDENTIFICATION: G - 94	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 4/8 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>REPEAT OF G-12</p>	

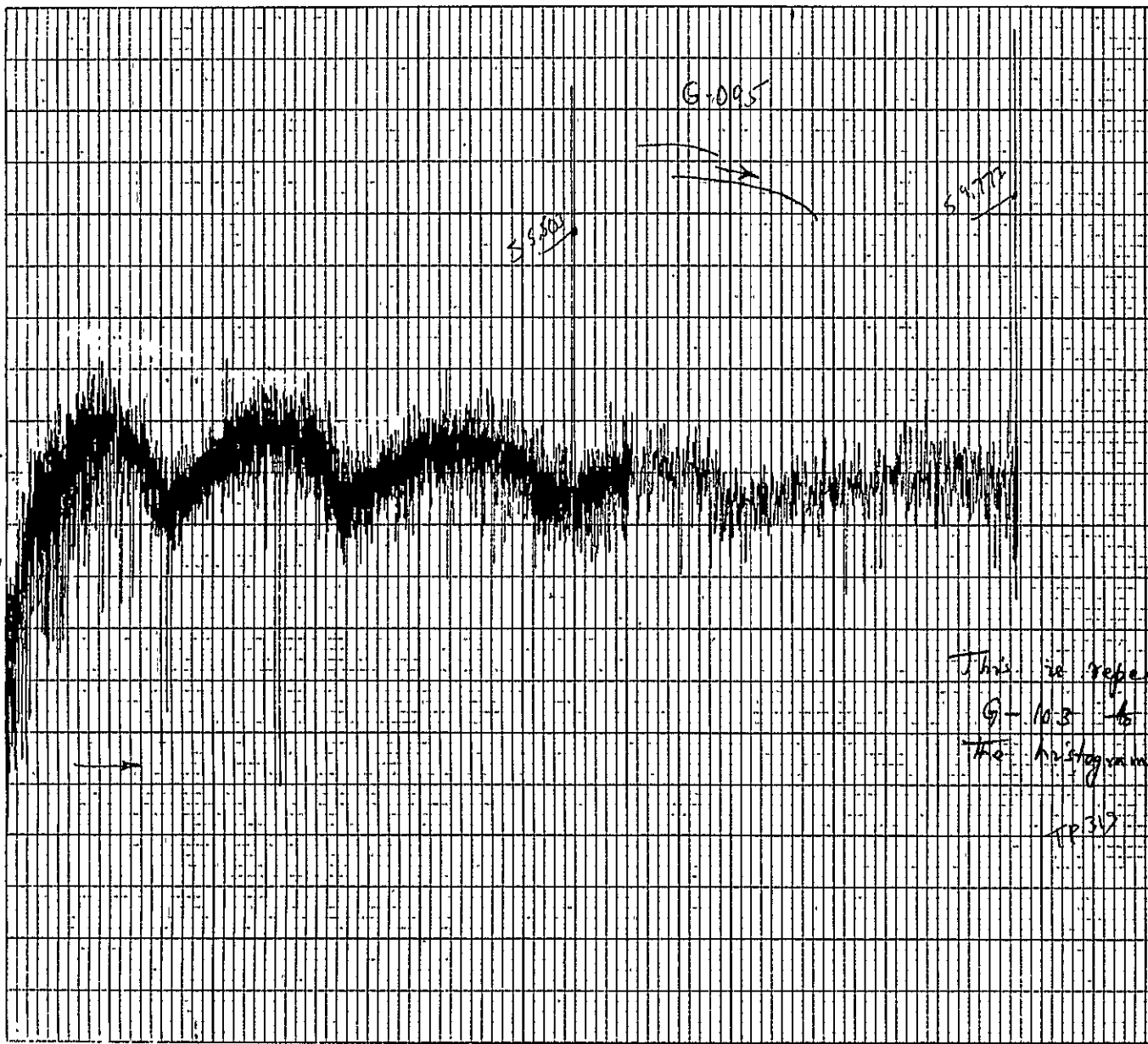
Repeat of G-92

NO. XY 101

910

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DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION: G - 95	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> ; E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{80}	
SCALE: X-AXIS: 2.2 INCH/UNIT	
Y-AXIS: 4/8 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

This is repeated on
G-103 to take
the histograms

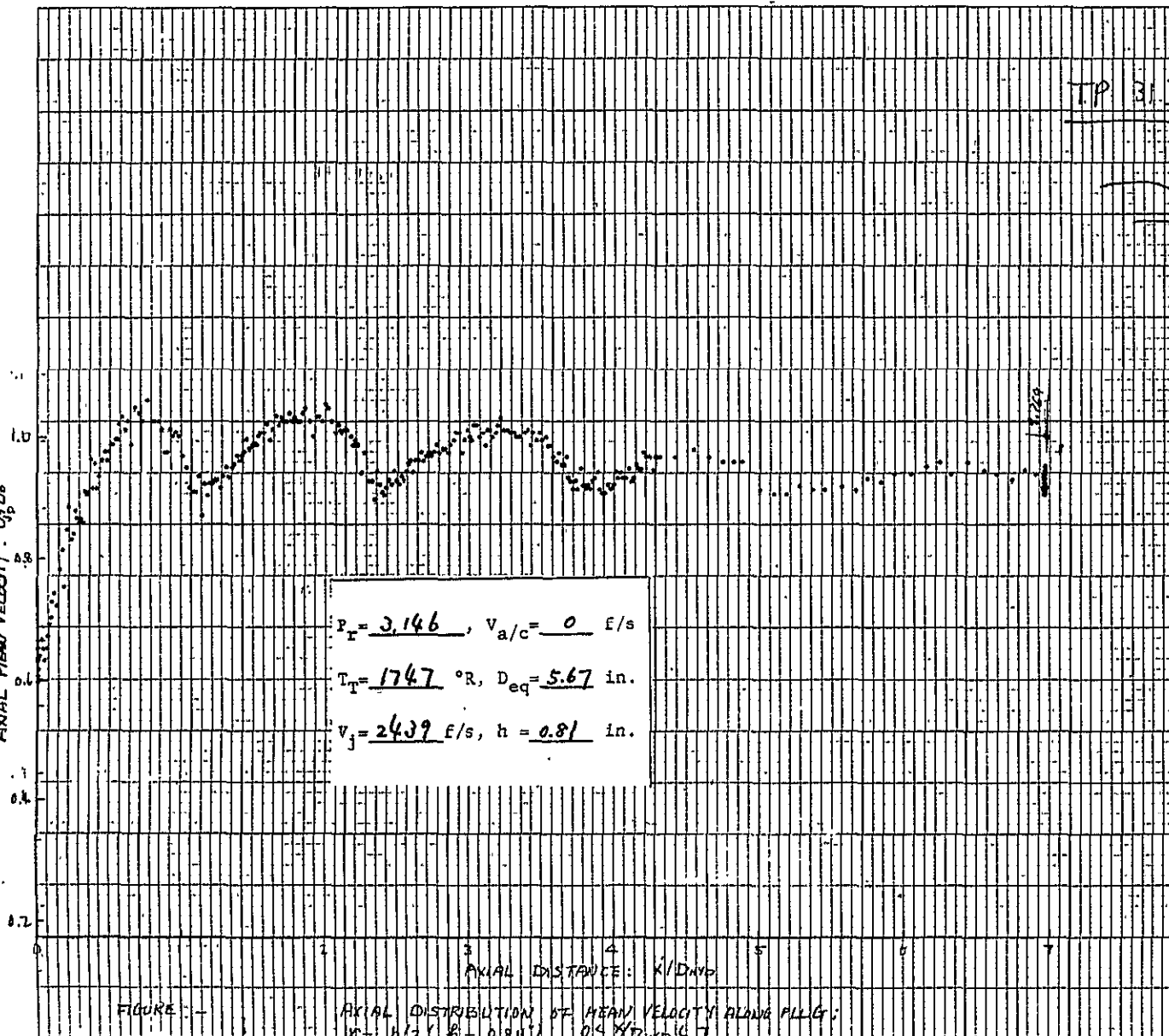
PP 37

P-029

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10/13/82

AXIAL MEAN VELOCITY: U_p/U_0

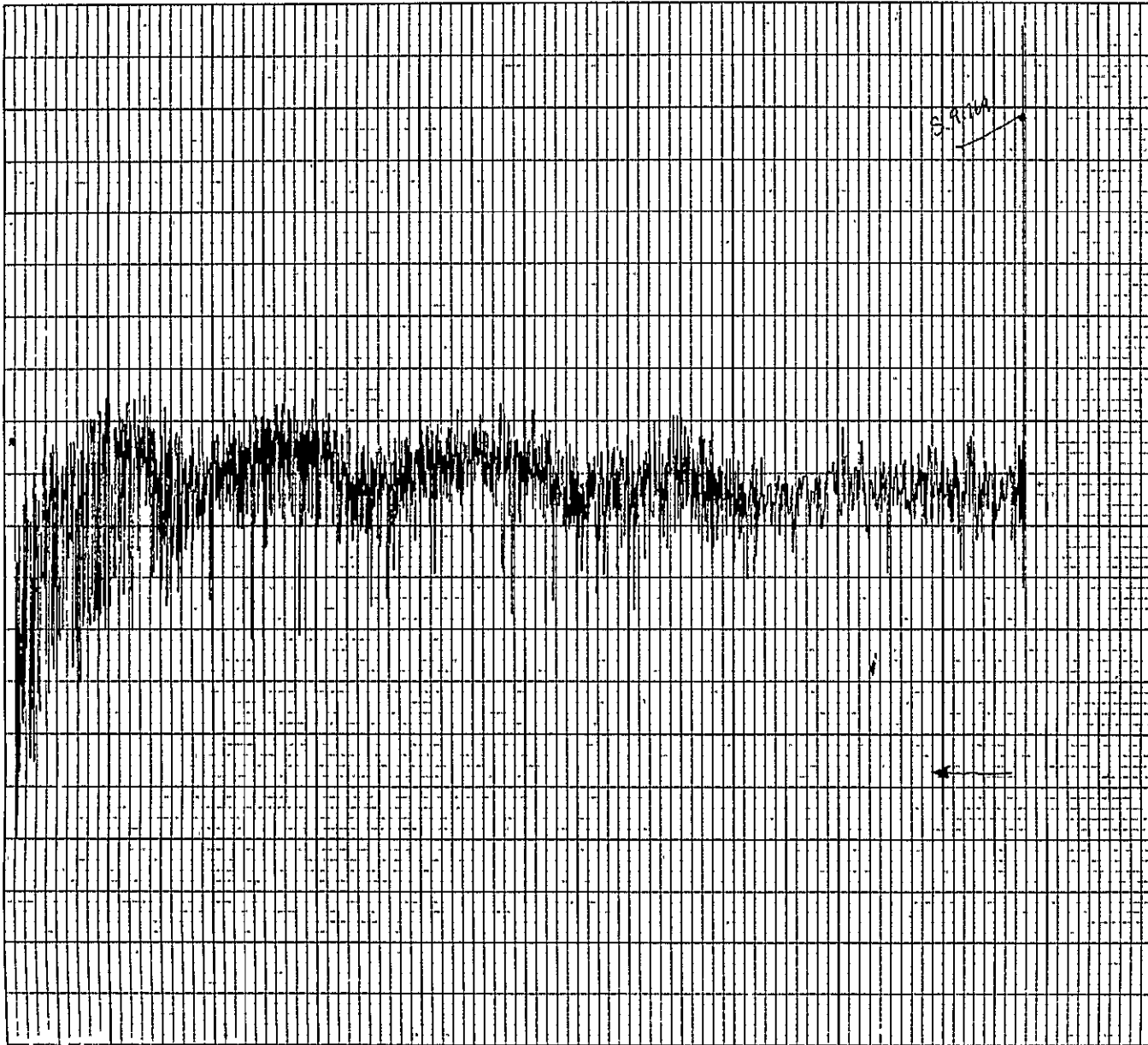


$P_r = 3.146$, $V_{a/c} = 0$ E/s
 $T_T = 1747$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2439$ E/s, $h = 0.81$ in.

FIGURE: -

AXIAL DISTRIBUTION OF MEAN VELOCITY ALONG PIPE;
 $x = 1.2$ ft, $R = 0.81$ in, $D = 5.67$ in

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 96	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



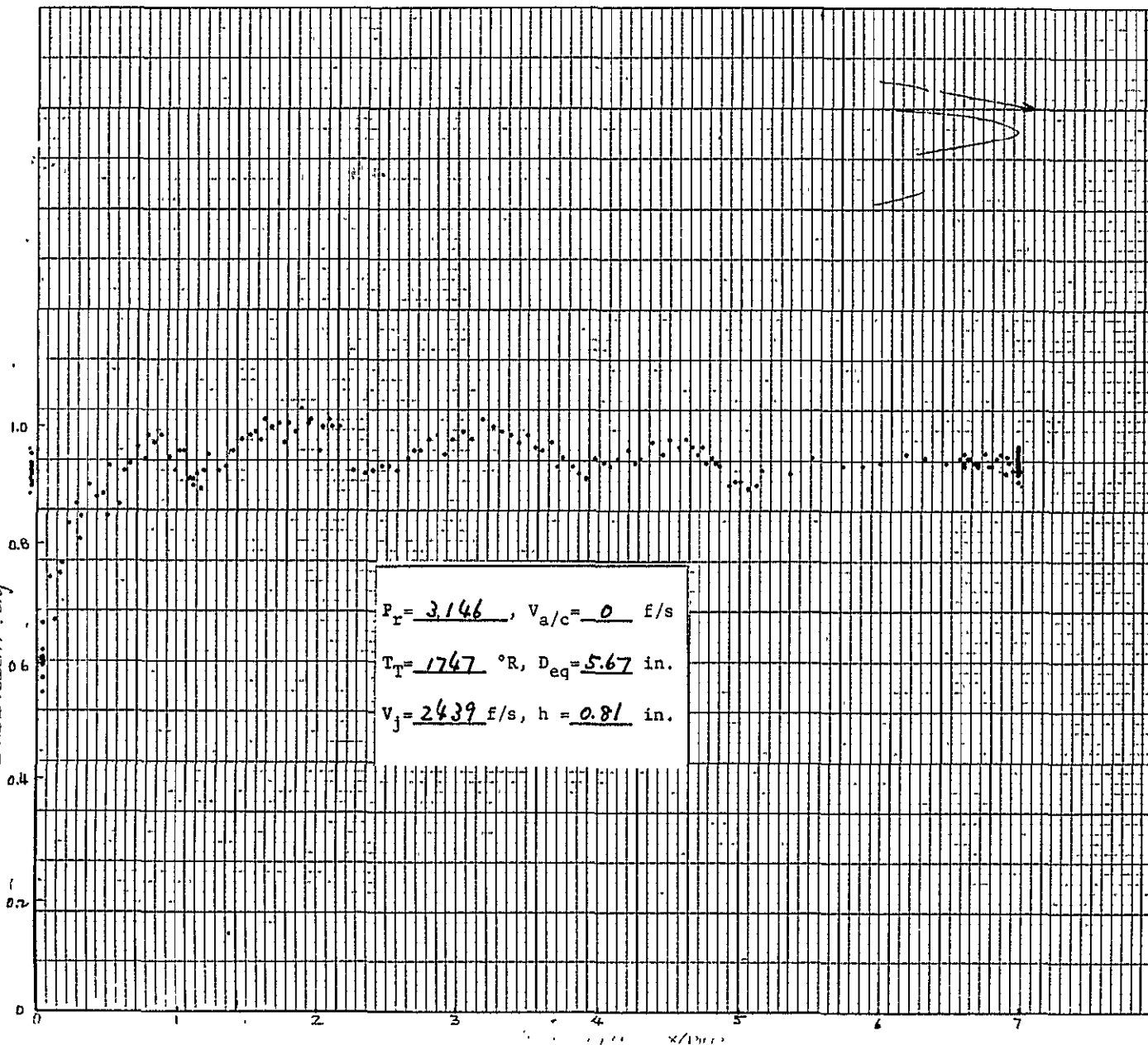
DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 97	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

NO XY 1101

913

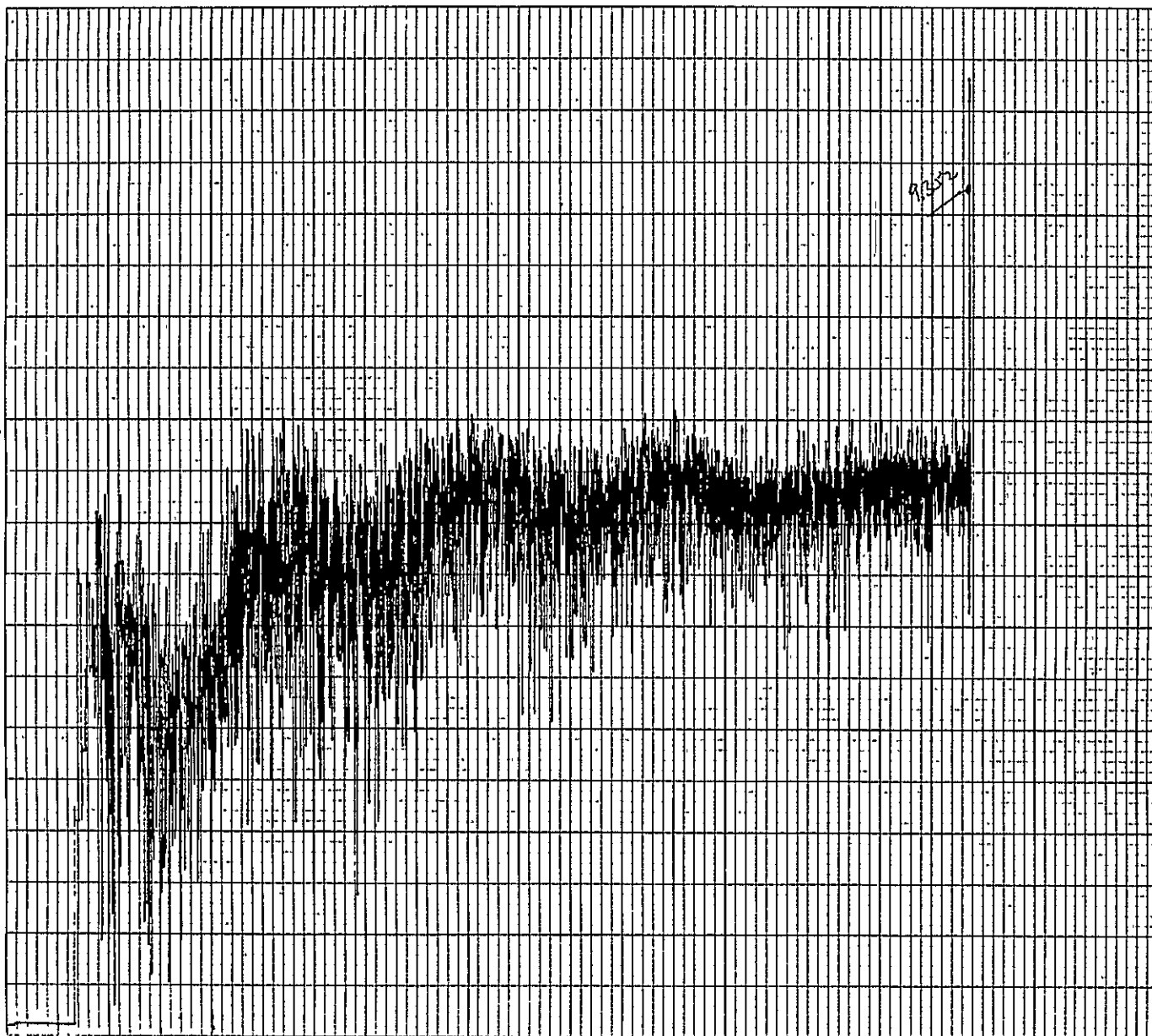
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GRAPH & CONTROL CORPORATION
1000 15th St. N.E.
Atlanta, Georgia 30309

AXIAL LINEAR VELOCITY: 0.19



DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION: G - 98	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 99	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.H. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_D
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 4/8 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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TIP 217

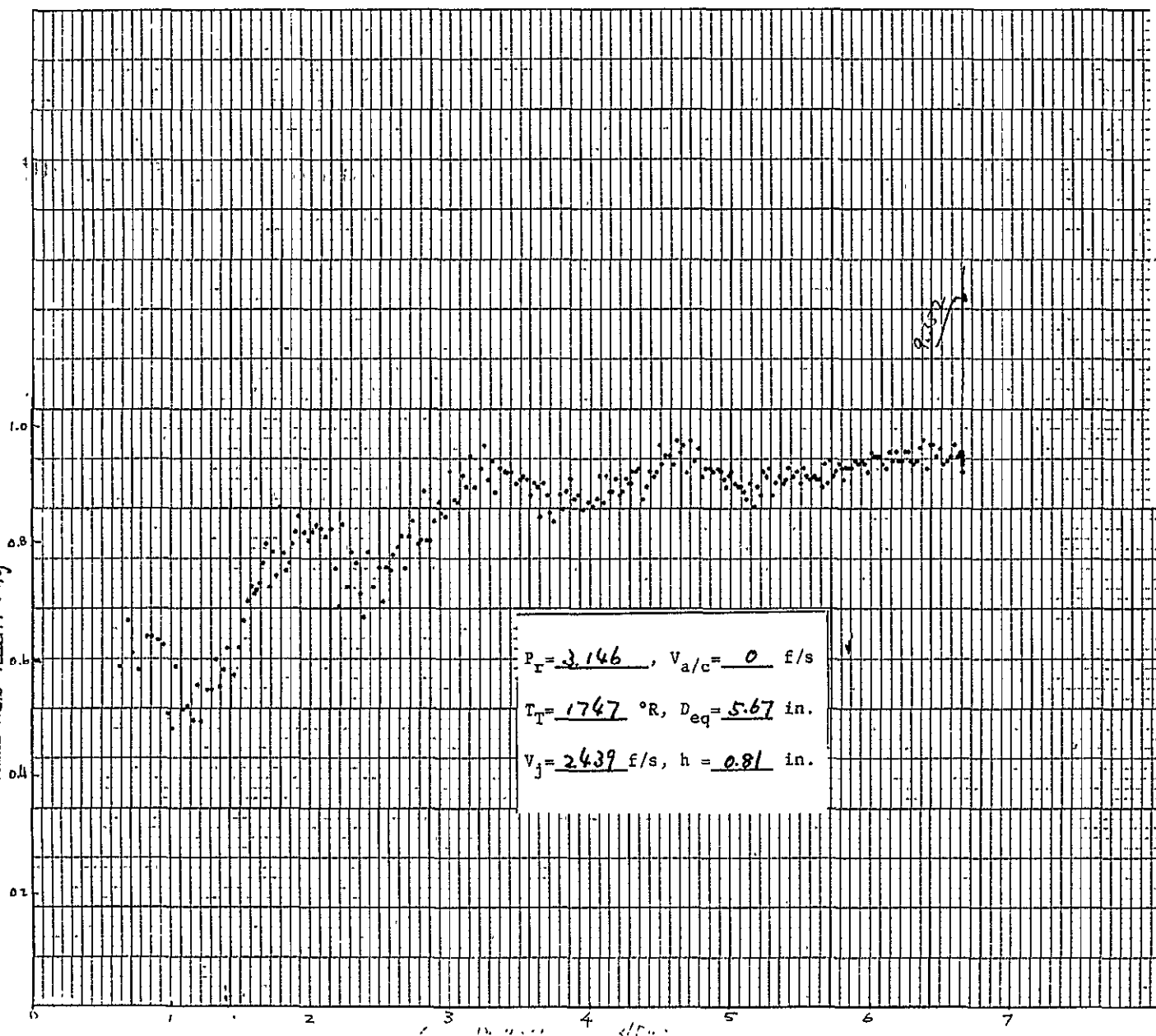
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915

AXIAL HEAD VELOCITY: $\mu\text{in/s}$



$P_r = 3.146$, $V_{a/c} = 0$ f/s
 $T_T = 1747$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2439$ f/s, $h = 0.81$ in.

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 100	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

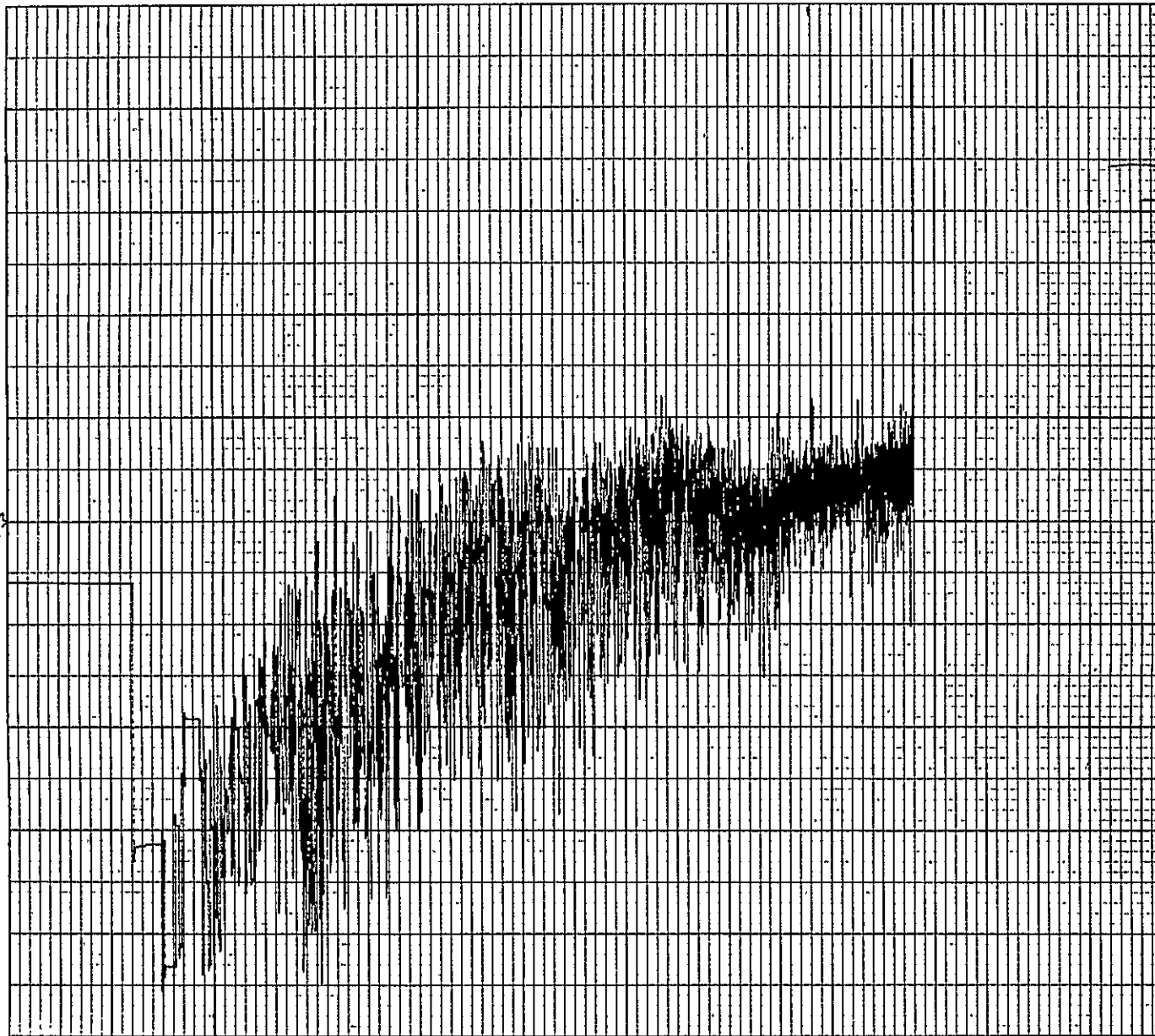
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37

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DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 101	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS X_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT.	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

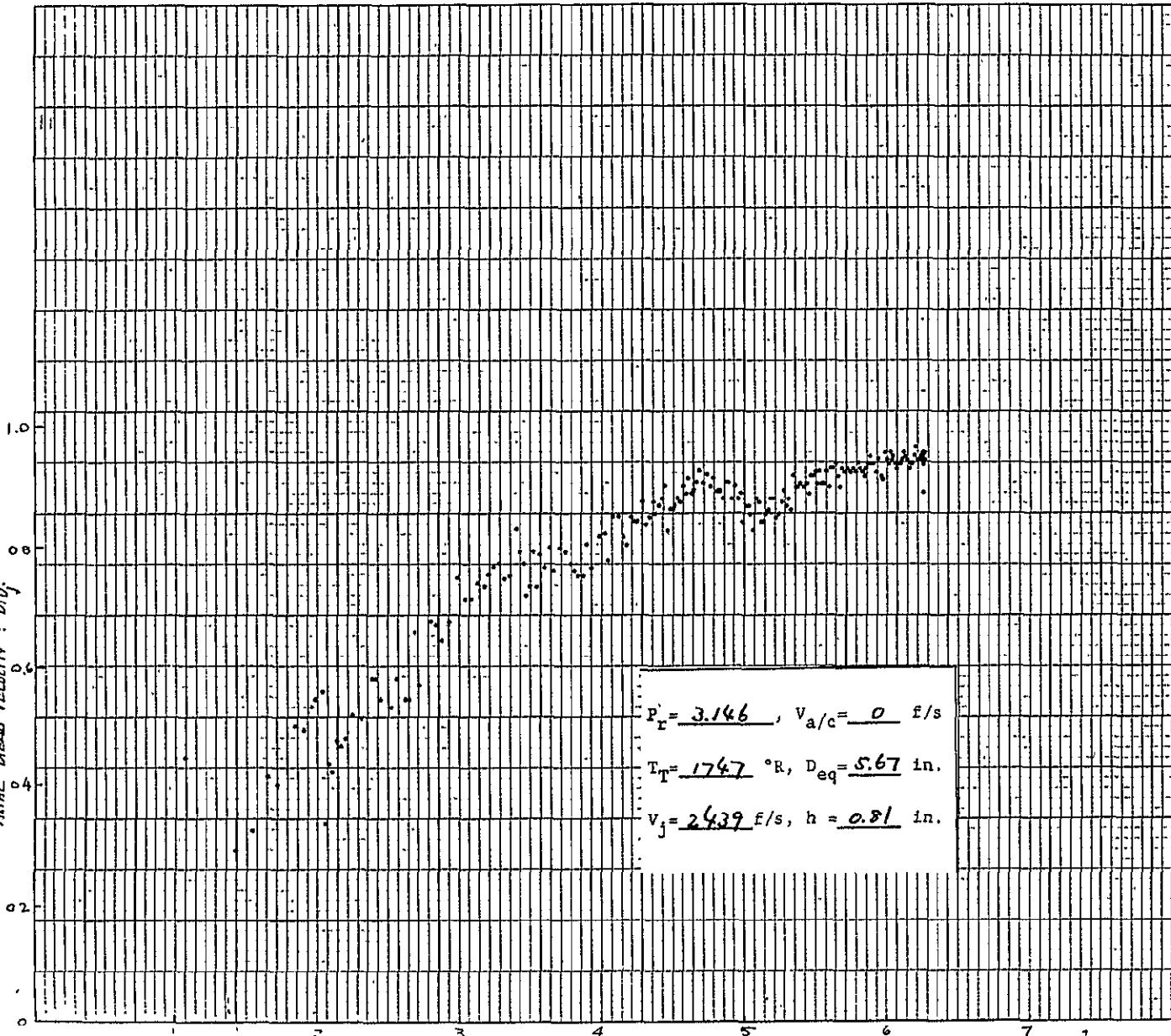
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AXIAL VELOCITY v/u



$$P_T = 3.146, v_{a/c} = 0 \text{ f/s}$$

$$T_T = 1747^\circ \text{R}, D_{eq} = 5.67 \text{ in.}$$

$$V_j = 2439 \text{ f/s}, h = 0.81 \text{ in.}$$

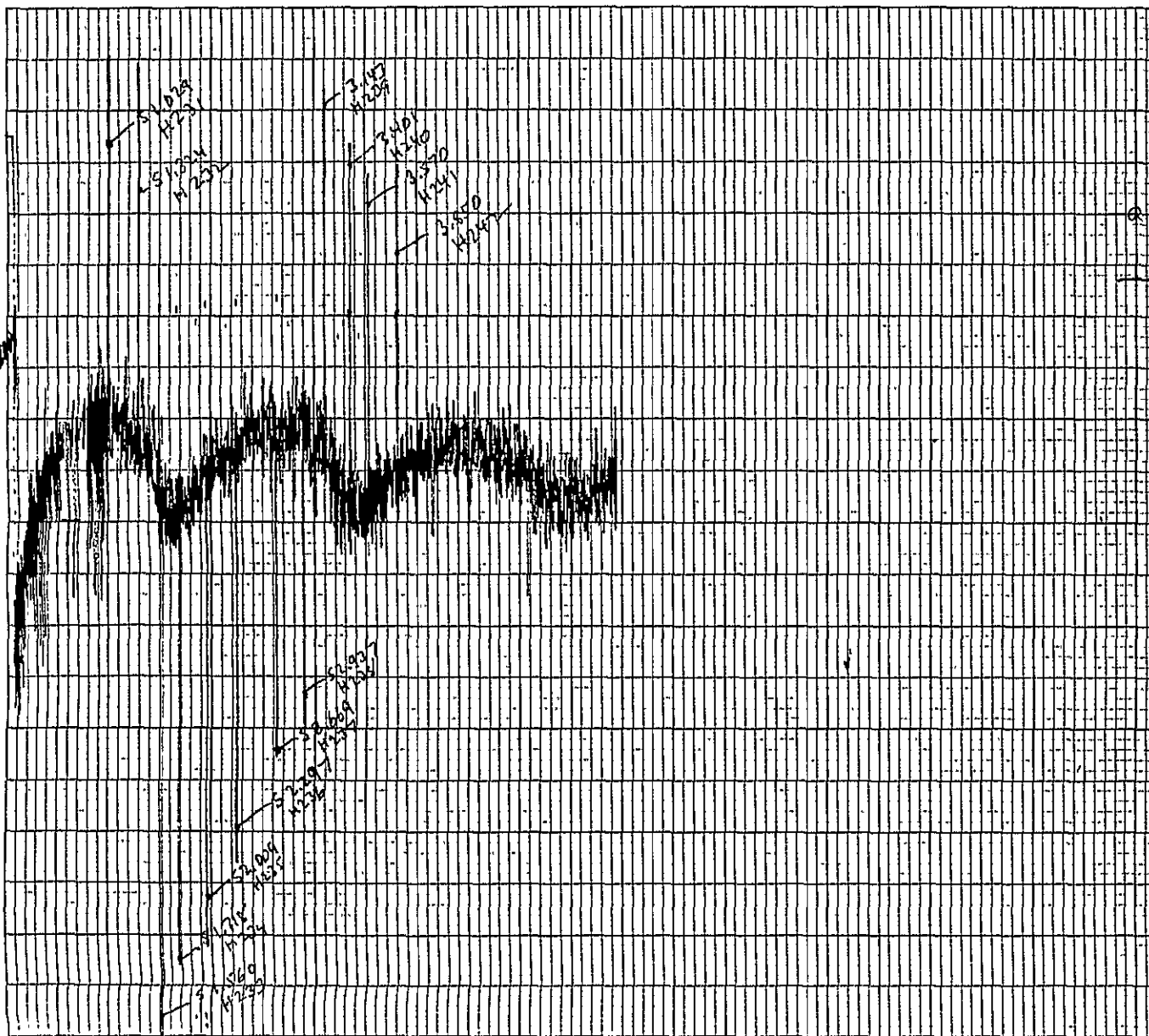
DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION: G - 102	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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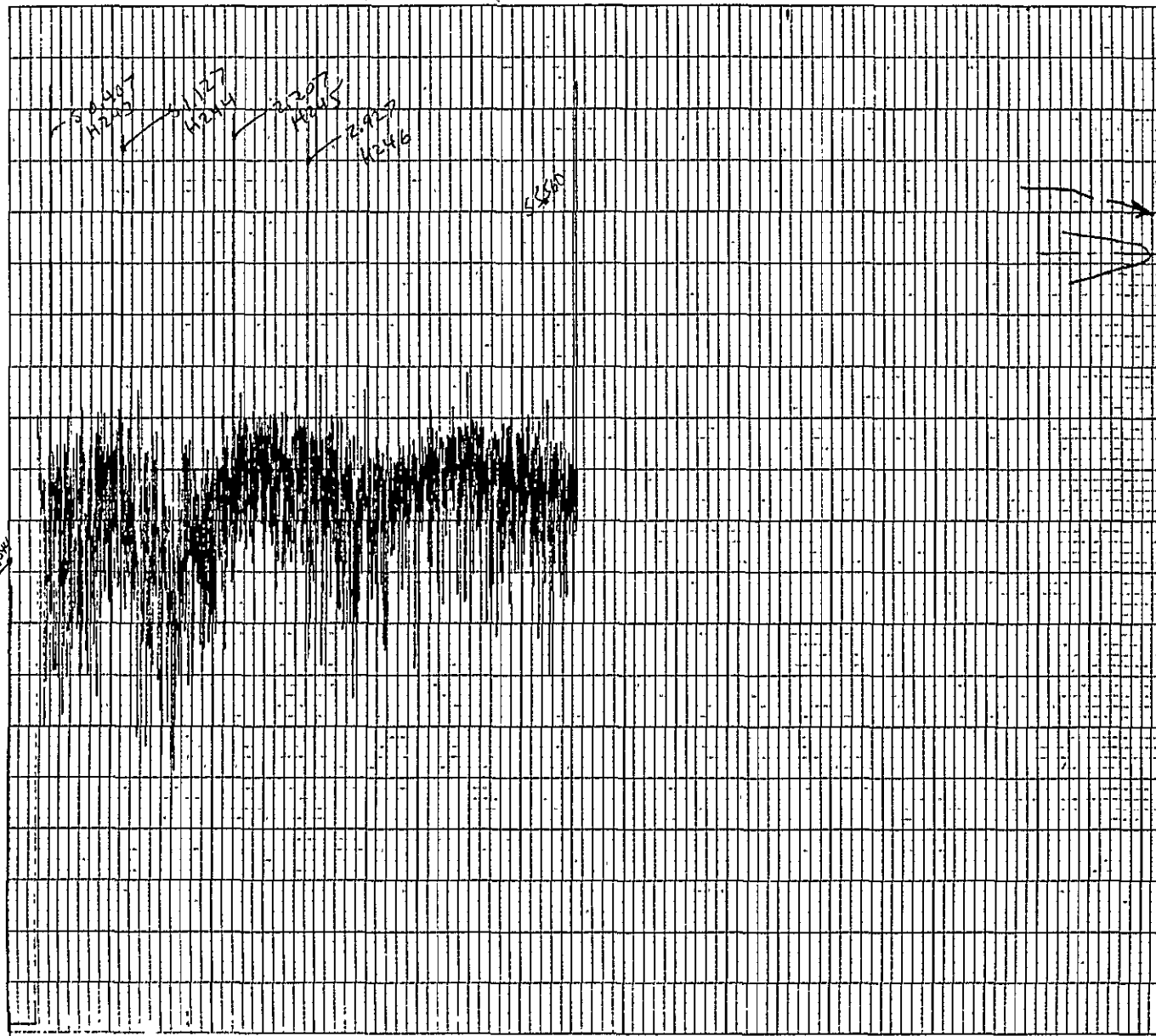
DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 103	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R ₁	
LOCATIONS TRAVERSE - VOLTS R ₂	
RADIAL <input type="checkbox"/> : E.M.F. <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (C) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D _{eq}	
SCALE: X-AXIS: 2.22 INCH/UNIT	
Y-AXIS: 418 F.P.S./UNIT	
HISTOGRAMS: H-231 TO H-242	
REPEAT OF G-95	
LINE OF W TRAVERSE	

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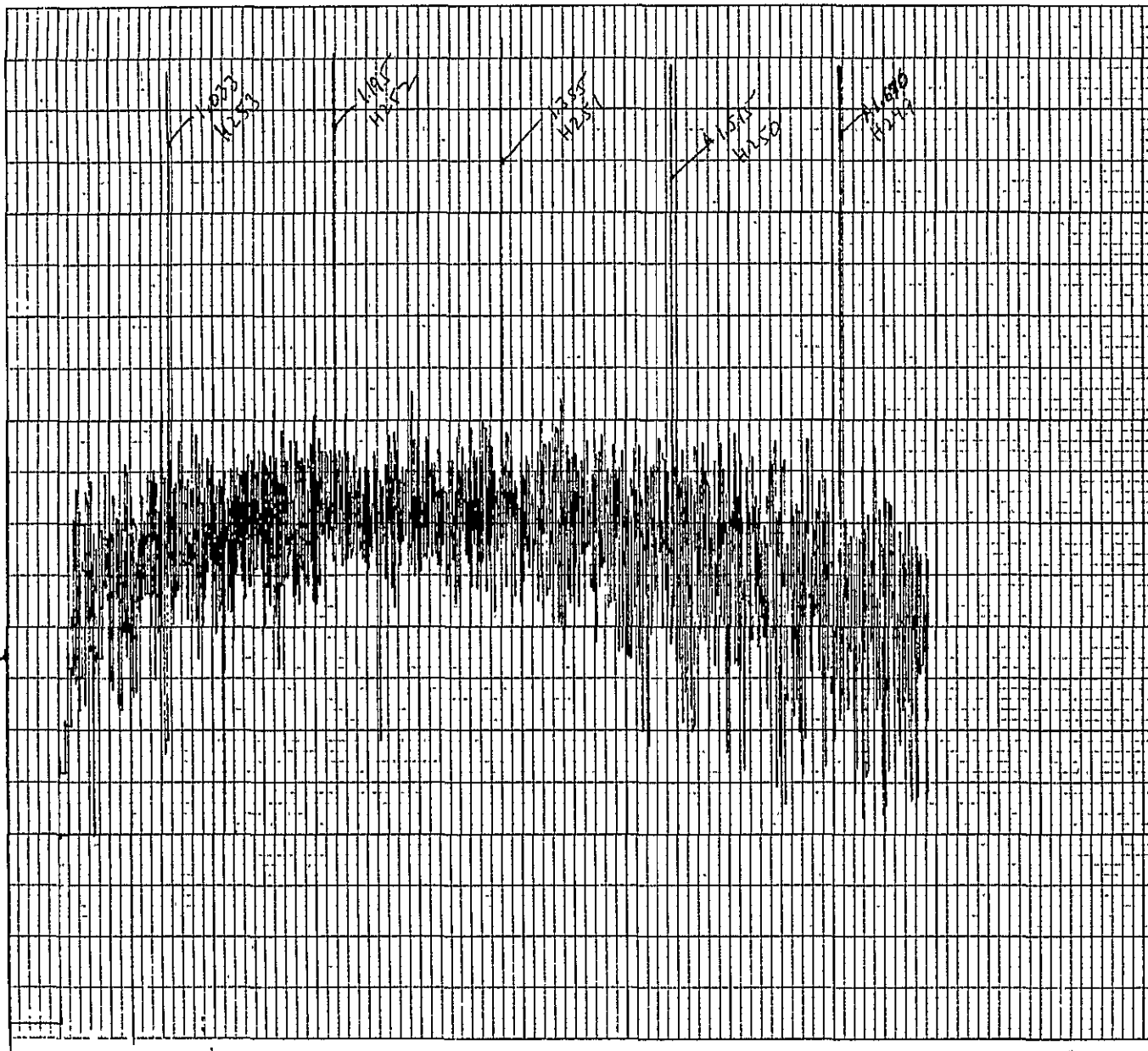
DATE: 10/12/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION: G - 104	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS $\frac{X}{D}$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D}$	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- 243 TO H- 246	
<p>REPEAT OF G-18</p>	

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10/12/81

920

0.874



DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G- 105	
TRAVERSE DETAILS:	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2} = 0$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H-249 TO H-253	

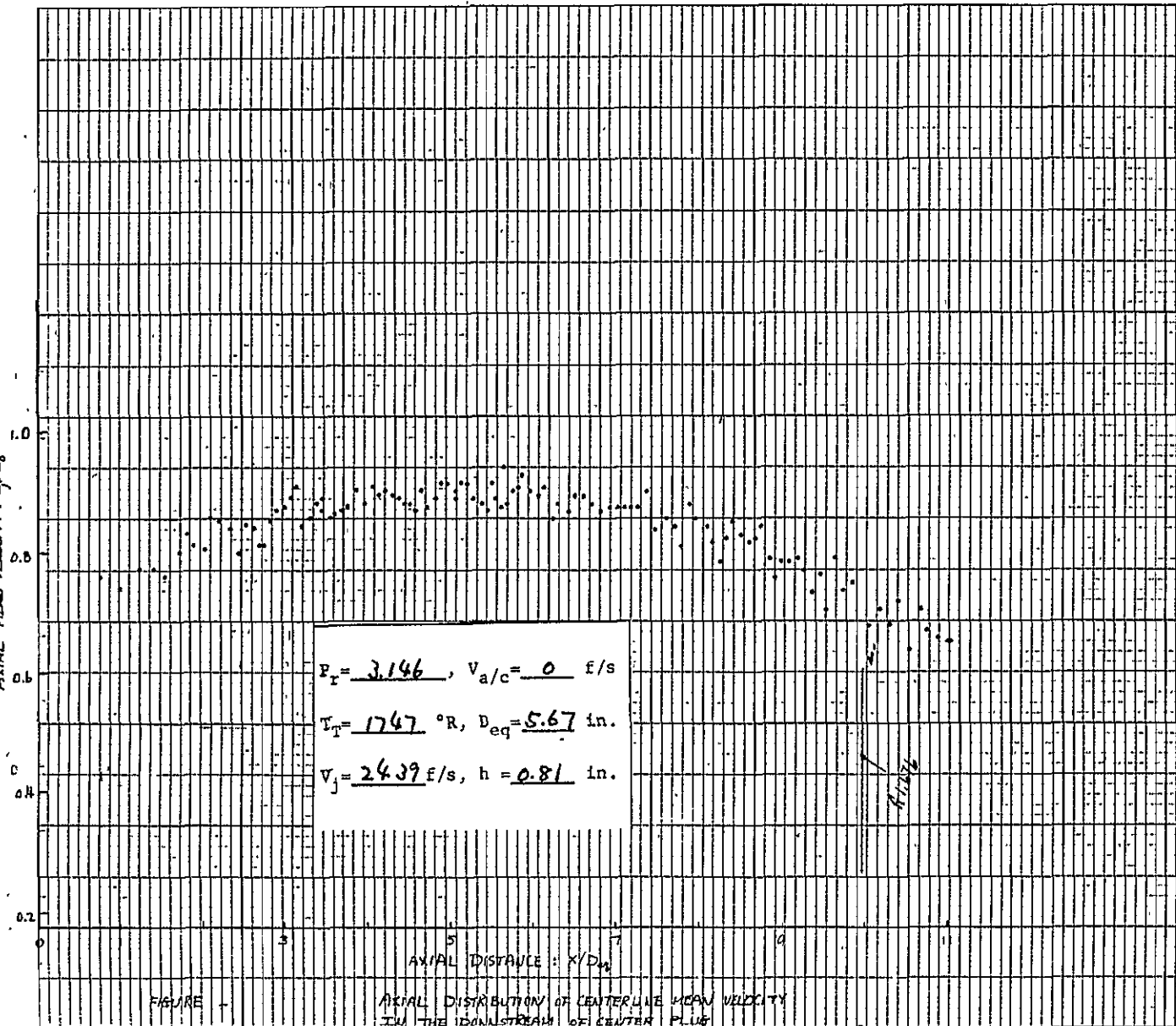


FIGURE -

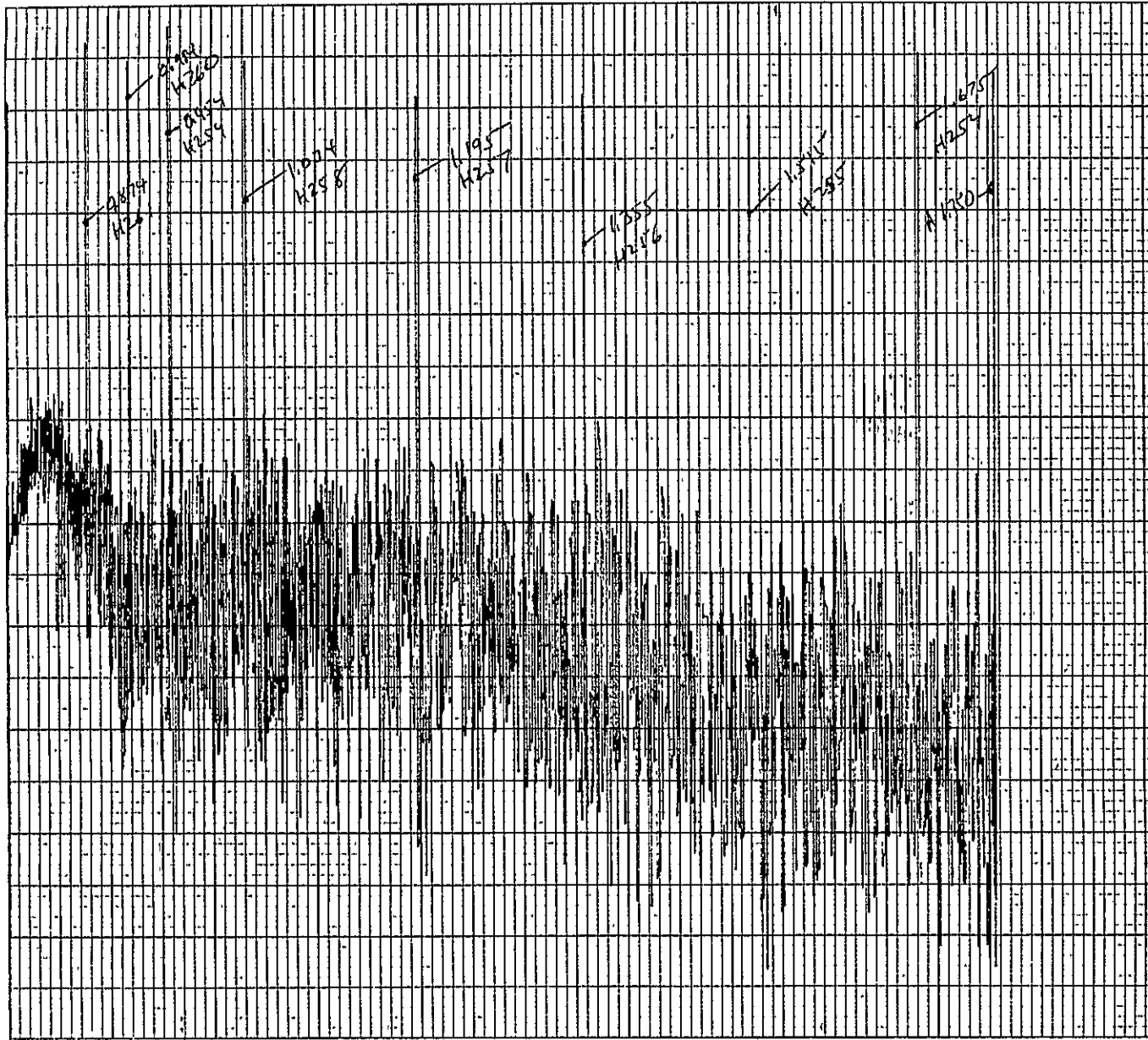
AXIAL DISTRIBUTION OF CENTERLINE MEAN VELOCITY
IN THE DOWNSTREAM OF CENTER PLUG

DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 106	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X/D_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 4.8 F.P.S./UNIT	
HISTOGRAMS: H- , TO H-	

No XY 1101

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922
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 QUALITY CHARTS CORPORATION
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DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION : G - 107	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	RADIAL REF. (C) - VOLTS $R \approx 1$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	AXIAL REF. (C) - VOLTS $X =$
LOCATIONS TRAVERSE -	VOLTS P_{eq}
SCALE : X-AXIS: 7.08 INCH/UNIT	Y-AXIS: 418 F.P.S./UNIT
HISTOGRAMS: H-254 TO H-261	

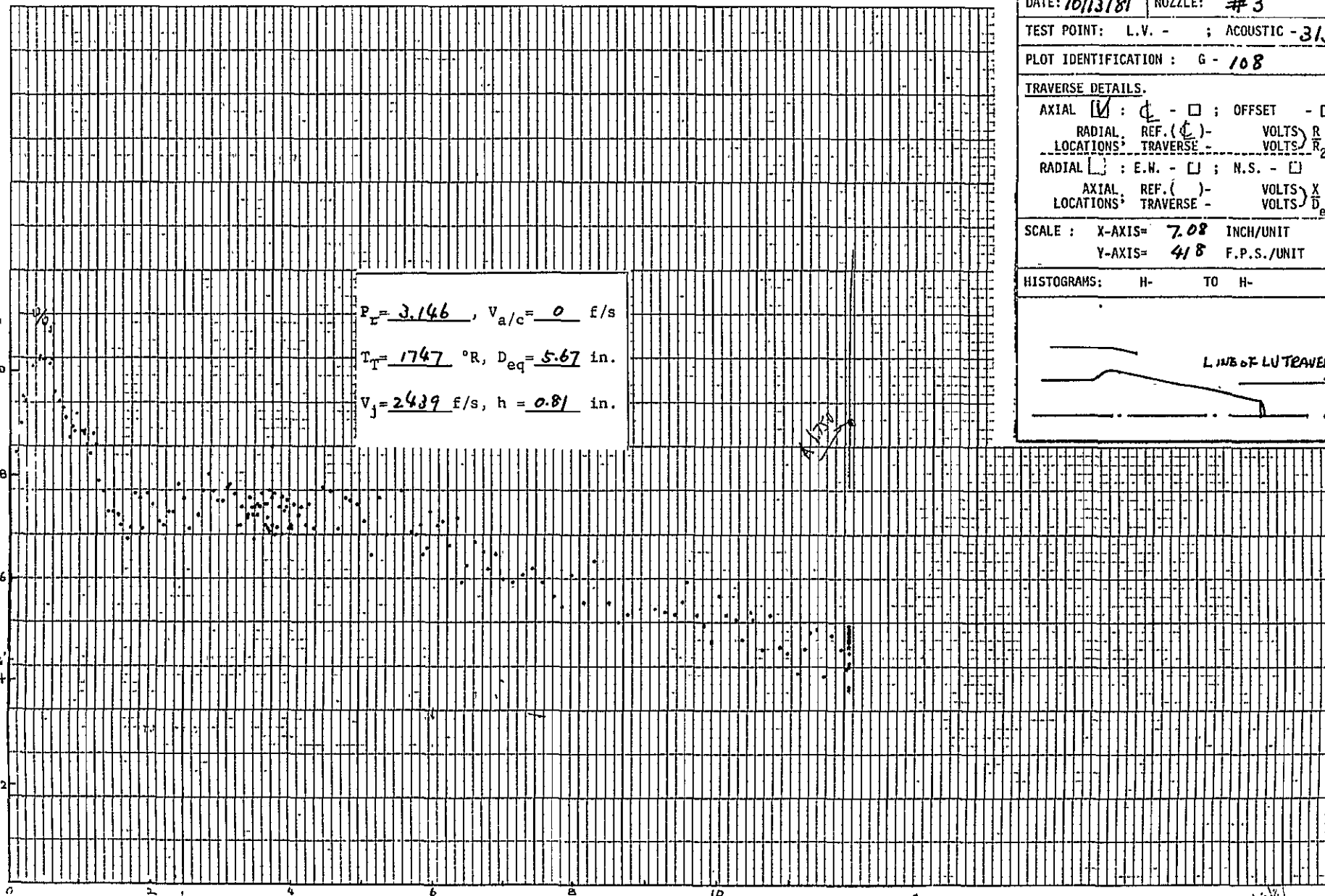
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No. XY-1101

AXIAL VELOCITY: 0.01

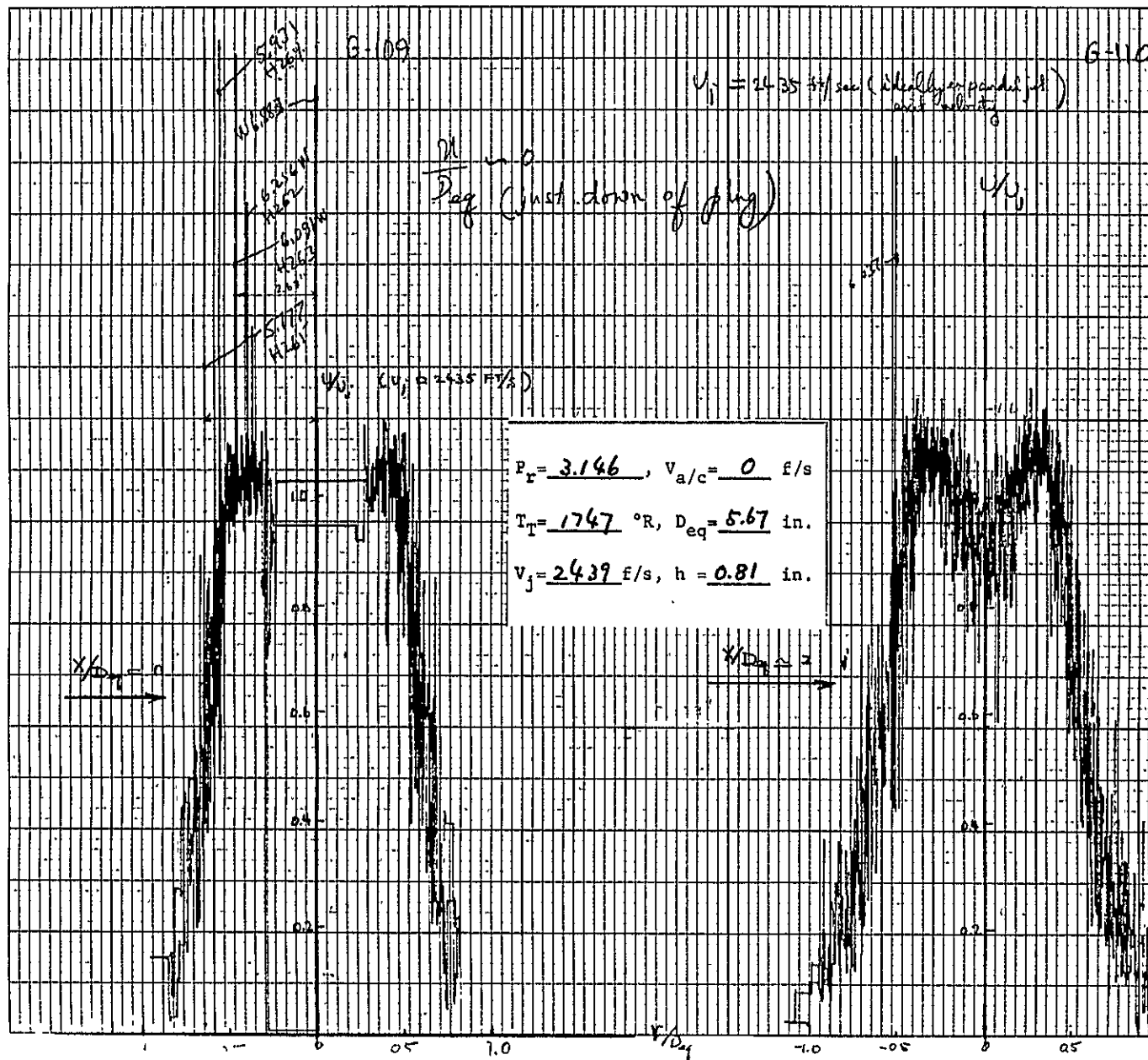


DATE: 10/13/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 108	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 4/8 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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T.P. 313 RADIAL MEAN VELOCITY DISTR. ①

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 3/3
PLOT IDENTIFICATION: G - 109/110	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 445 F.P.S./UNIT	
HISTOGRAMS: H-262 TO H-265	



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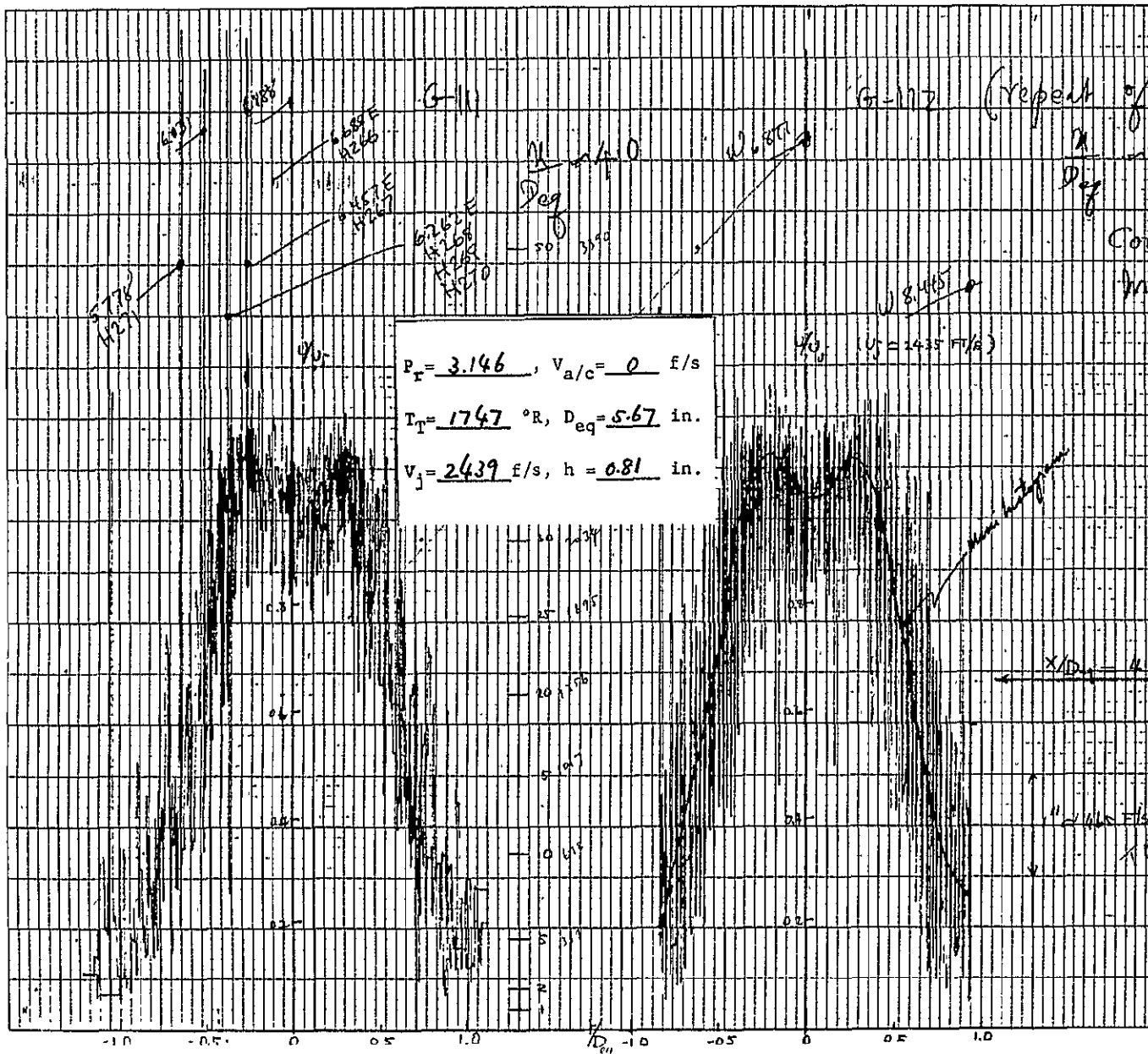
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T.P. 313 RADIAL MEAN VELOCITY DISTRIB. (2)

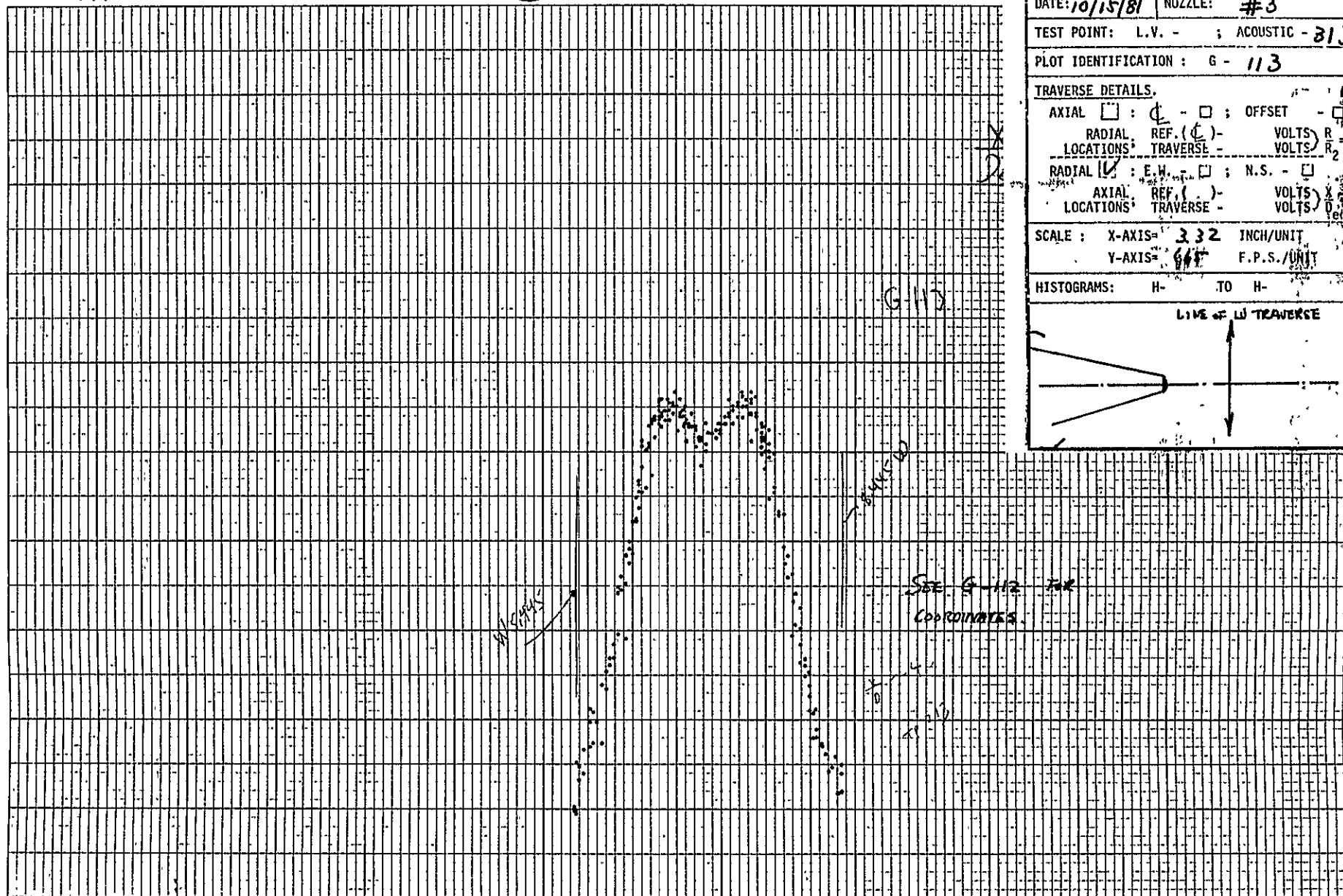
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 111 / 112	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS $X \approx 4$
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 465 F.P.S./UNIT	
HISTOGRAMS: H- 266 TO H- 271	
<p>LINE OF W TRAVERSE</p>	



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T.P. 313 RADIAL MEAN VELOCITY DISTRIB. (2A)

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION: G - 113	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
SCALE: X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 64 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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T.P. 313 RADIAL MEAN VELOCITY DISTRIB. ③

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 114	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL $\sqrt{}$: E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 4.65 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LV TRAVERSE</p>	

$P_r = 3.146$, $V_{a/c} = 0$ f/s

$T_r = 1747$ °R, $D_{eq} = 5.67$ in.

$V_j = 2439$ f/s, $h = 0.81$ in.

$V_j (V_j = 2439 \text{ f/s})$

$X/D_{eq} = 6$

-1.5 -1.0 -0.5 0 0.5 1.0 1.5

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T.P. 313 RADIAL MEAN VELOCITY DISTRIB. (4)

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 313
PLOT IDENTIFICATION: G - 115	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.H. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (<input type="checkbox"/>) -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 665 F.P.S./UNIT	
HISTOGRAMS: H- 272 TO H- 276	

$P_r = 3.146$, $V_{a/c} = 0$ f/s
 $T_r = 1747$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2439$ f/s, $h = 0.81$ in.

$V_{D_{eq}} = 8$

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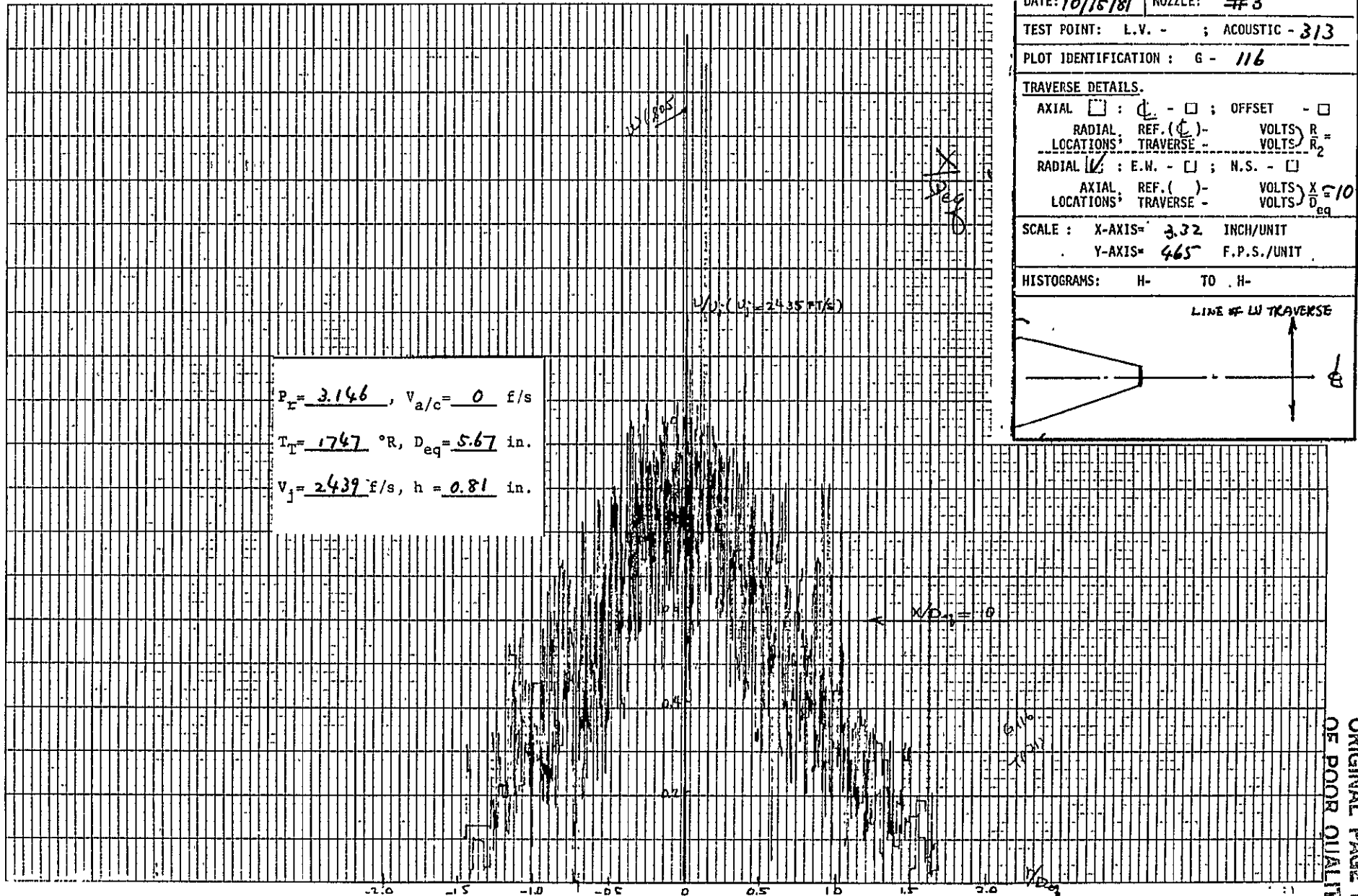
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T.P. 313 RADIAL DISTRIB. OF MEAN VELOCITY ⑤

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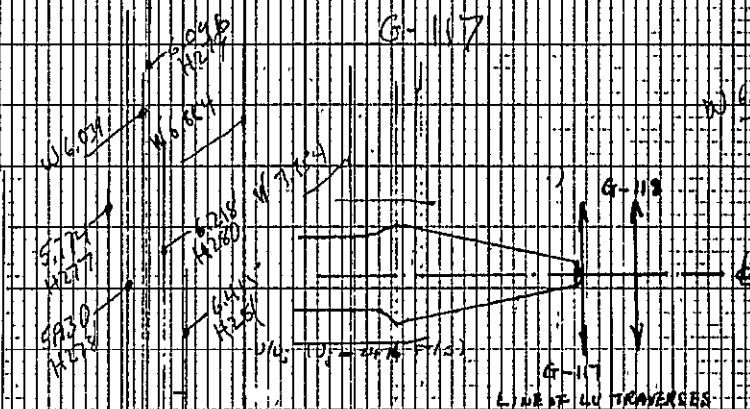


DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 313	
PLOT IDENTIFICATION: G - 116	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	$D_{eq} = 10$
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 465 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

T.P. 321 RADIAL DISTR. OF MEAN VELOCITY ①

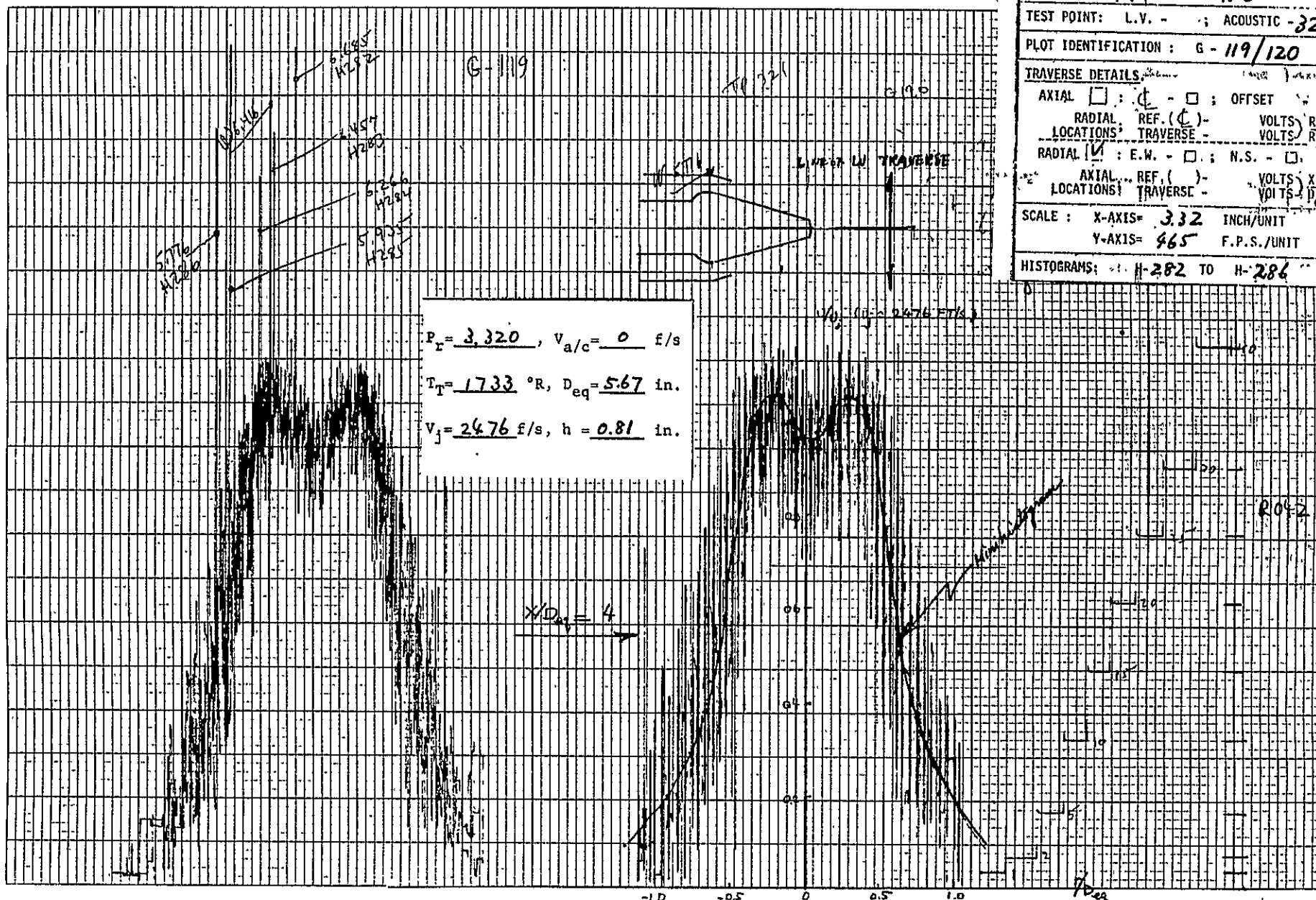
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 117/118	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL LOCATIONS: REF. () -	VOLTS R_1
TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL LOCATIONS: REF. () -	VOLTS X
TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 465 F.P.S./UNIT	
HISTOGRAMS: H-277 TO H-281	

$P_r = 3.320$, $V_{a/c} = 0$ f/s
 $T_T = 1733$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2476$ f/s, $h = 0.81$ in.



T.P. 32/ RADIAL DISTR. OF MEAN VELOCITY ②

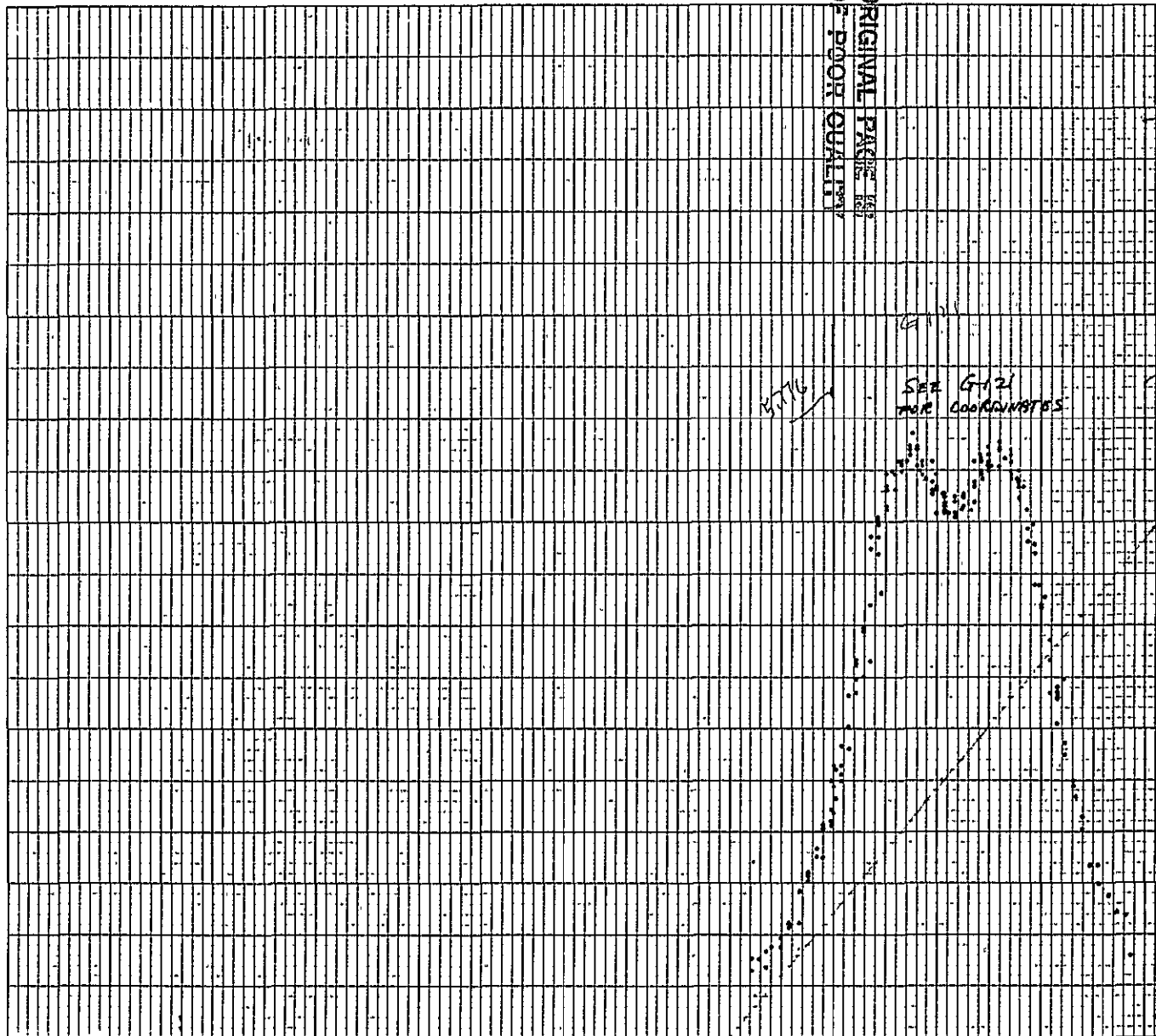
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 119/120	
TRAVERSE DETAILS:	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_2	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 465 F.P.S./UNIT	
HISTOGRAMS: H-282 TO H-286	



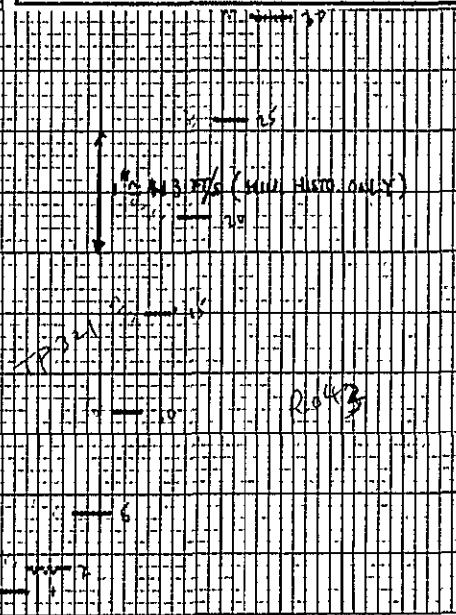
$P_r = 3.320$, $V_{a/c} = 0$ f/s
 $T_T = 1733$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2476$ f/s, $h = 0.81$ in.

$X/D_n = 4$

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OF 2
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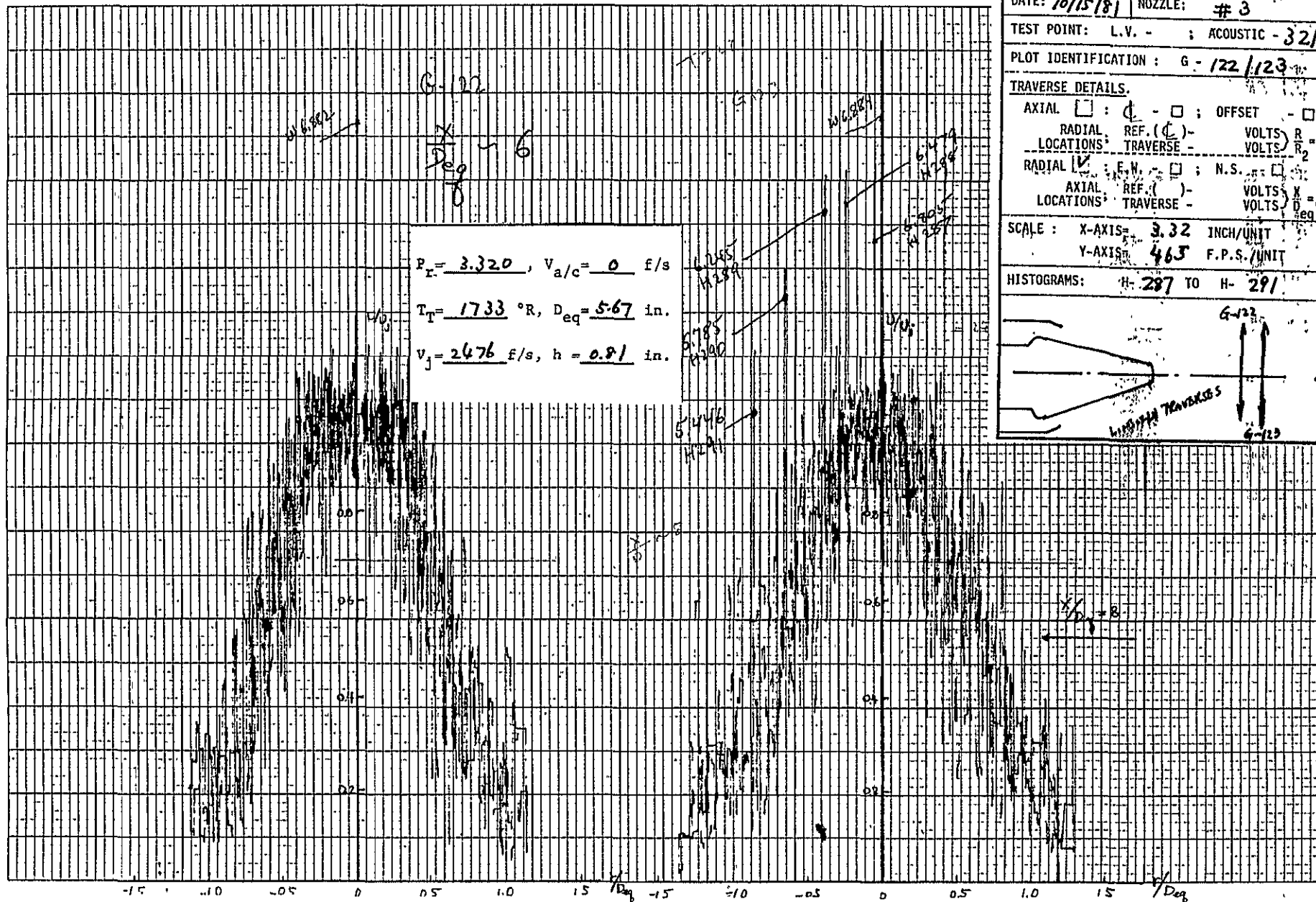


DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 12/	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	$D_{eq} = 4$
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



T.P. 321 RADIAL DISTR. OF MEAN VELOCITY (3)

DATE: 10/15/81	NOZZLE: # 3
TEST POINT: L.V. -	ACOUSTIC - 321
PLOT IDENTIFICATION: G - 122 / 123	
TRAVERSE DETAILS:	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.V. <input type="checkbox"/> ; N.S. <input type="checkbox"/>	
AXIAL REF. (C) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS $D = 6.8$
SCALE: X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 463 F.P.S./UNIT	
HISTOGRAMS: H- 287 TO H- 291	



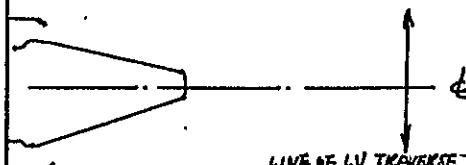
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T.P. 321 RADIAL DISTR. OF MEAN VELOCITY ④

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 321	
PLOT IDENTIFICATION: G - 124	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL LOCATIONS: REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL LOCATIONS: REF. (ϕ) -	VOLTS $\frac{X}{D_{eq}}$
TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 465 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
	

$P_e = 3.320$, $v_{a/c} = 0$ f/s

$T_1 = 1733$ °R, $D_{eq} = 5.67$ in.

$V_j = 2476$ f/s, $h = 0.81$ in.

G-124

$\frac{X}{D_{eq}} \sim 1.0$

$\frac{X}{D_{eq}} \sim 1.0$

$\frac{X}{D_{eq}} \sim 1.0$

$\frac{X}{D_{eq}} \sim 1.0$

-2.0 -1.5 -1.0 -0.5 0 0.5 1.0 1.5 2.0 $\frac{X}{D_{eq}}$

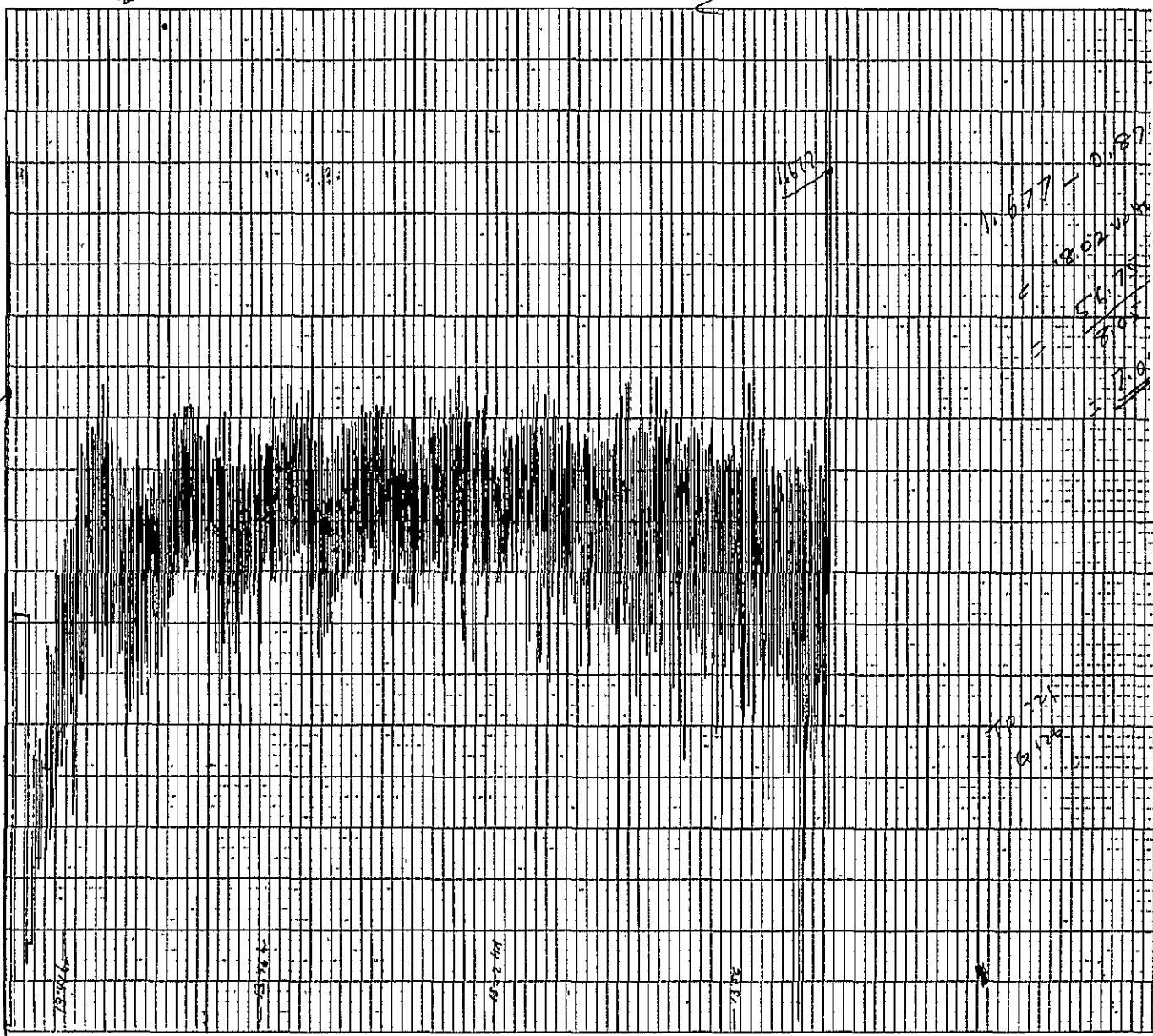
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DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 126	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

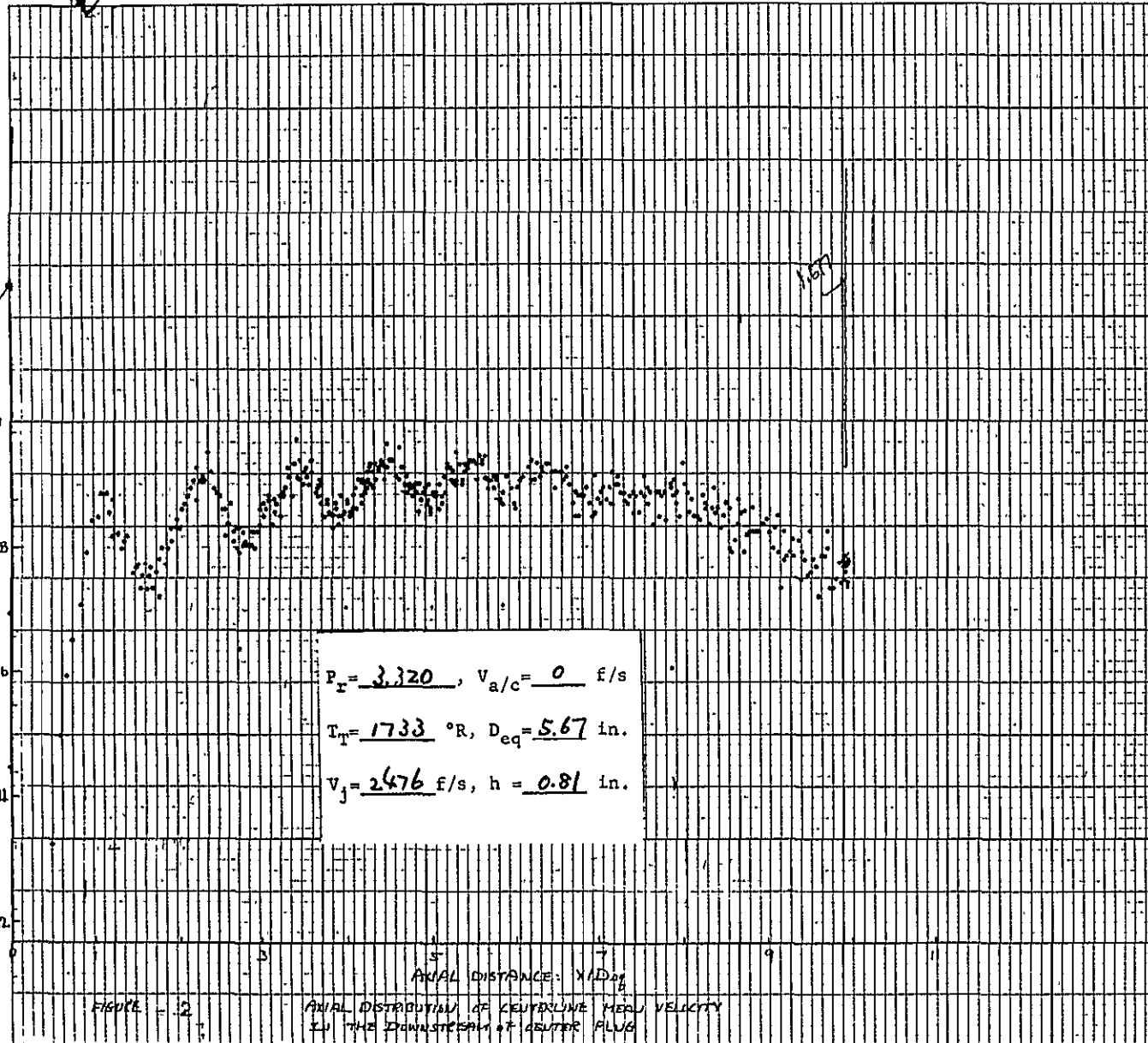
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AXIAL MEAN VELOCITY U/U_j



$P_r = 3.320$, $V_{a/c} = 0$ f/s

$T_r = 1733$ °R, $D_{eq} = 5.67$ in.

$V_j = 2476$ f/s, $h = 0.81$ in.

AXIAL DISTANCE: X/D₀

FIGURE - 2

AXIAL DISTRIBUTION OF CENTERLINE MEAN VELOCITY
IN THE DOWNSTREAM OF CENTER PLUG

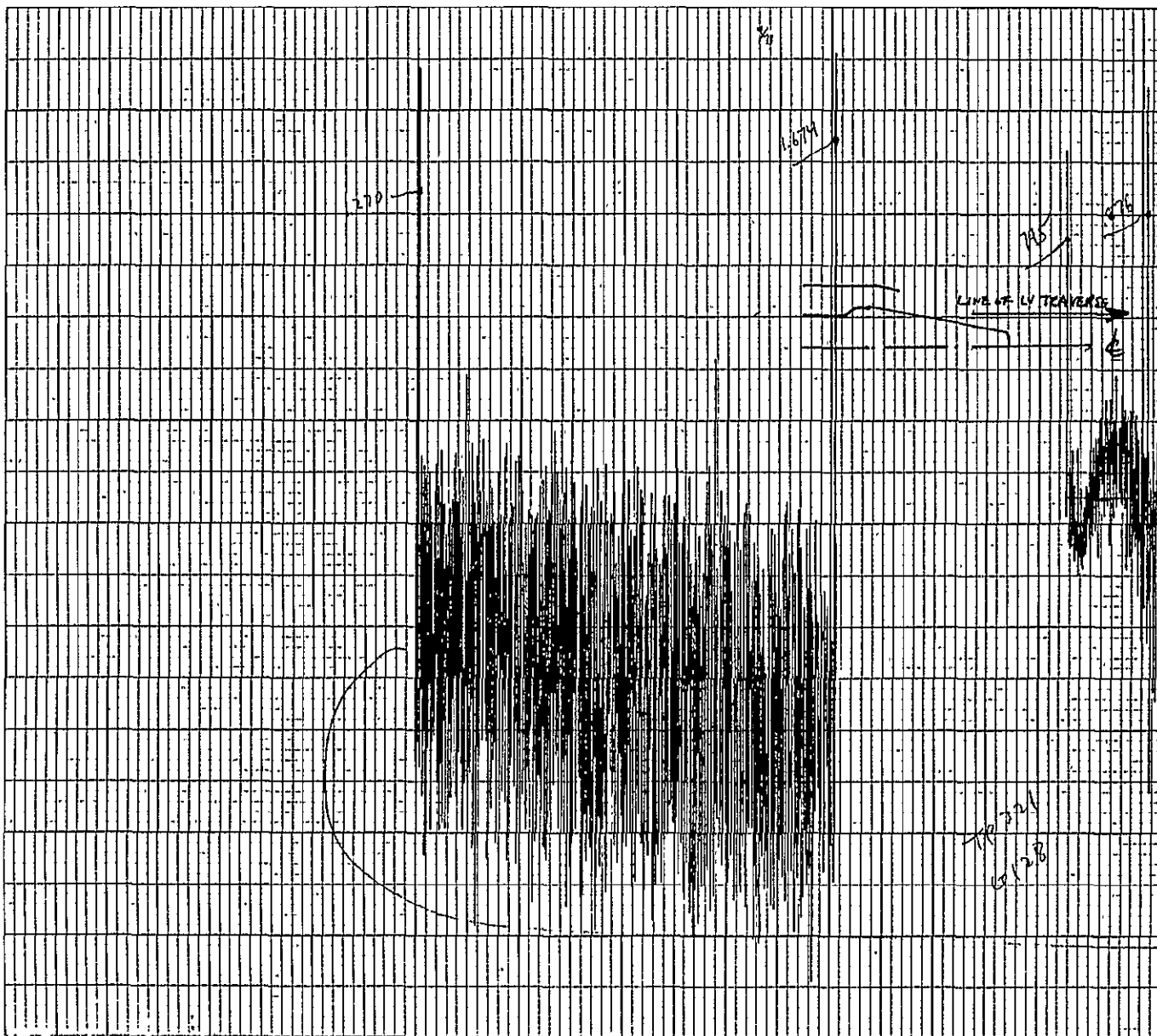
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 321
PLOT IDENTIFICATION: G - 127	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $R_1 = 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (C) -	VOLTS $X =$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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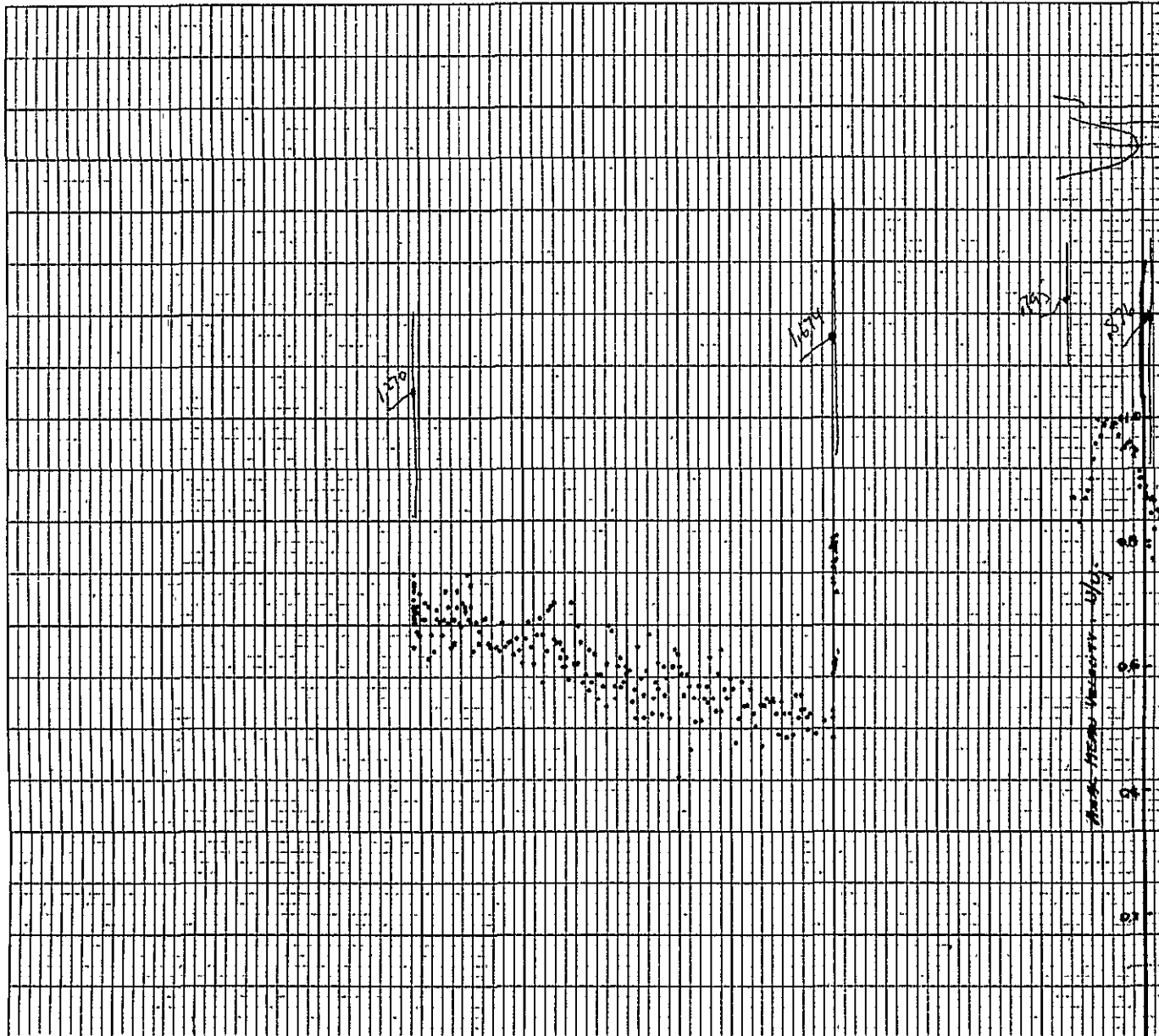
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DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 321
PLOT IDENTIFICATION: G - 128	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 1$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X =$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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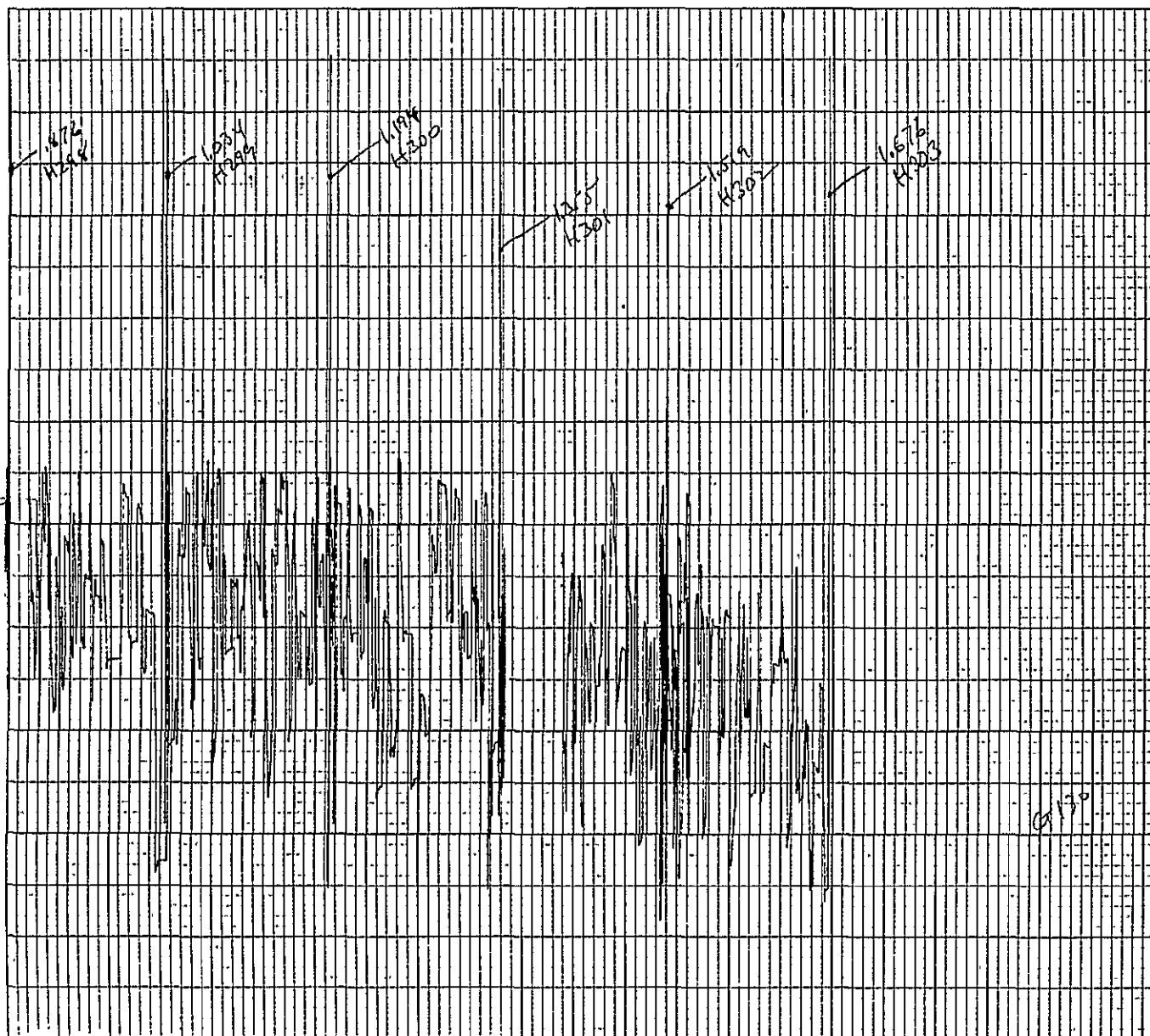
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 129	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 4/3 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$P_z = 3.320$, $V_{a/c} = 0$ f/s
 $T_r = 1733$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2476$ f/s, $h = 0.81$ in.

0 2 4 X/r

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DATE: 10/15/81 NOZZLE: #3

TEST POINT: L.V. - ; ACOUSTIC - 321

PLOT IDENTIFICATION: G - 130

TRAVERSE DETAILS.

AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐
RADIAL REF. () - VOLTS R
LOCATIONS: TRAVERSE - VOLTS R₂

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS X_{eq}

SCALE : X-AXIS= 708 INCH/UNIT
Y-AXIS= 413 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE

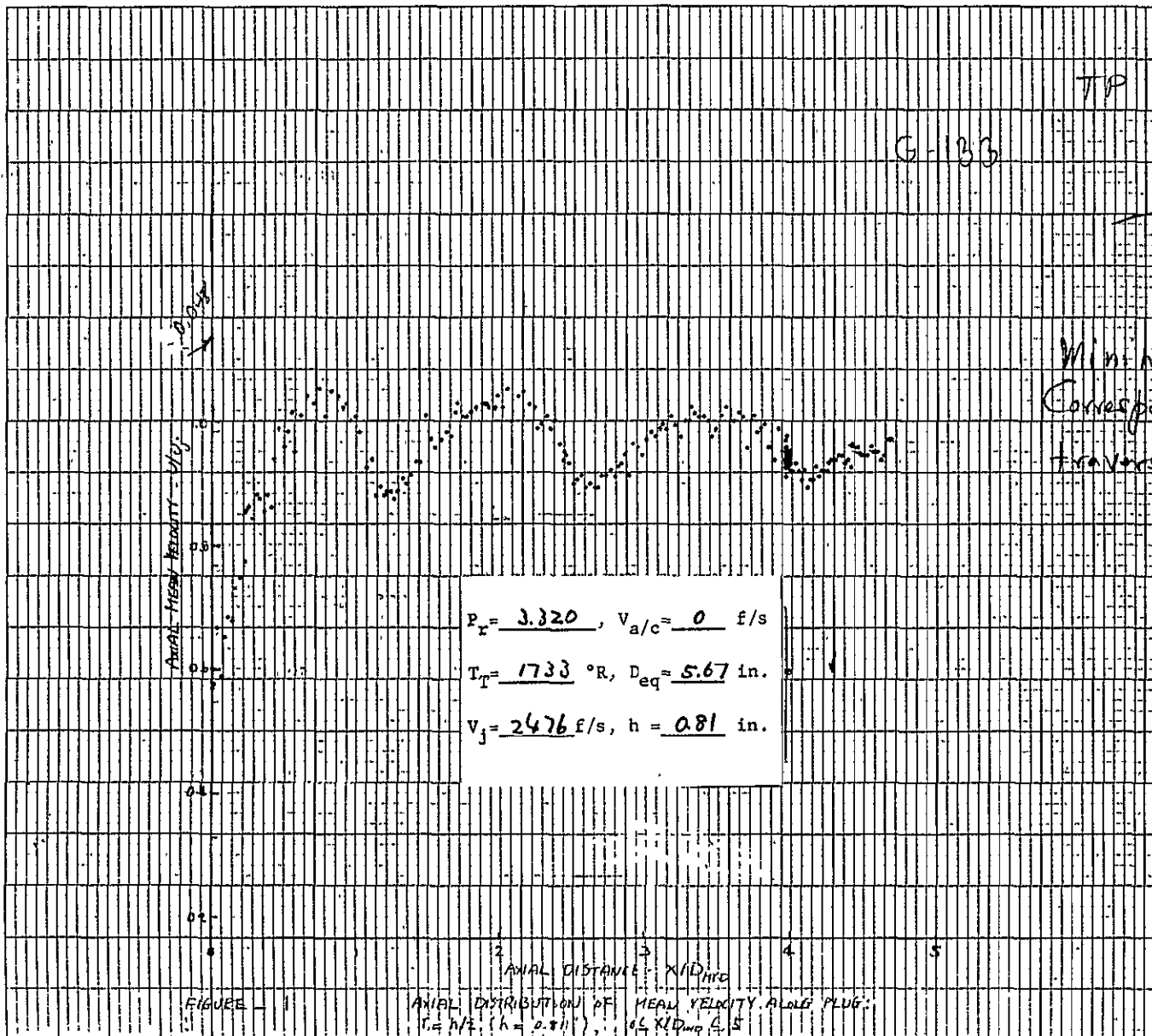
Y

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DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 131/132	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 - F.P.S./UNIT	
HISTOGRAMS: H- 304 TO H- 316	



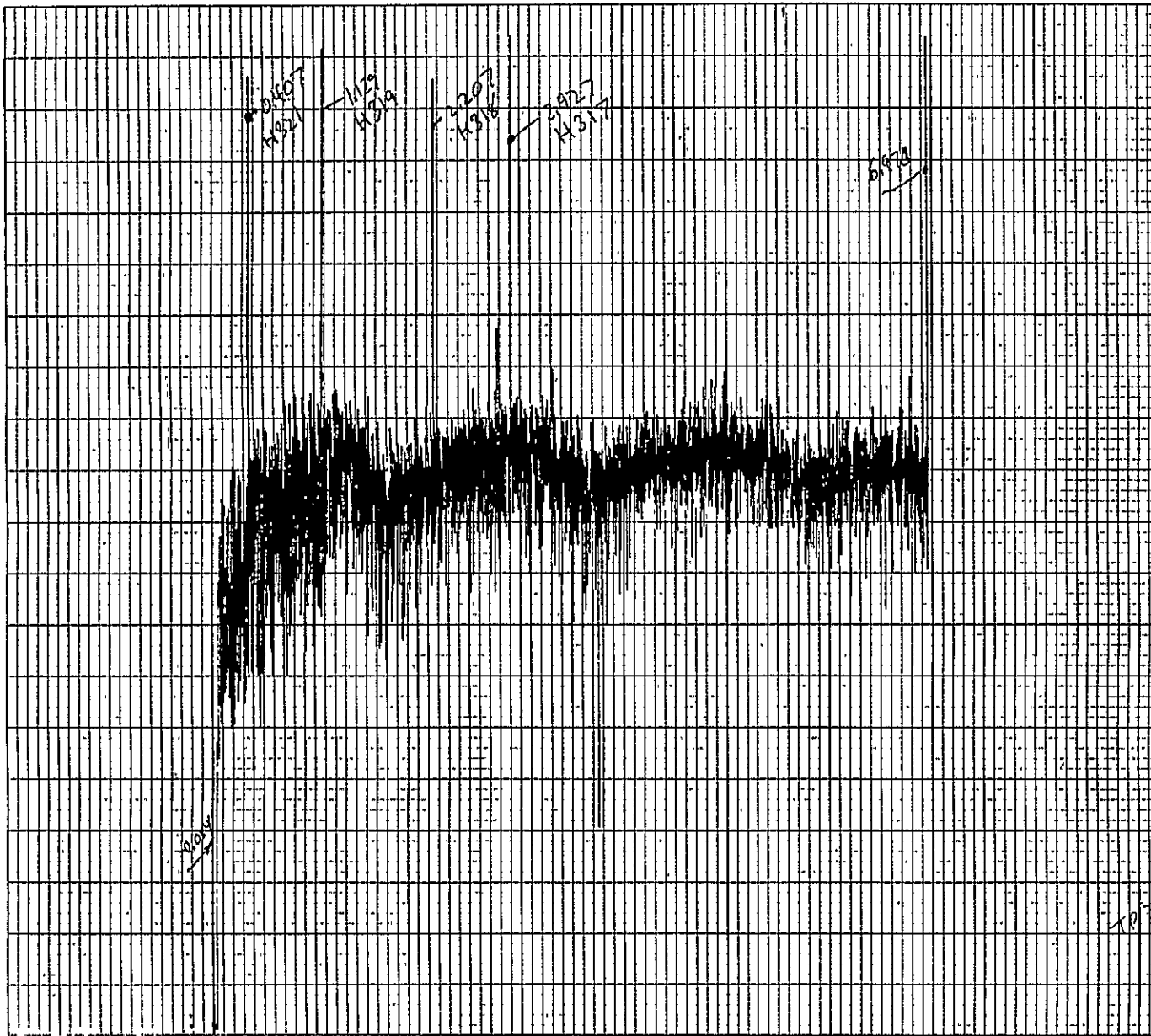
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DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 32/
PLOT IDENTIFICATION: G - 133	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 4/3 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

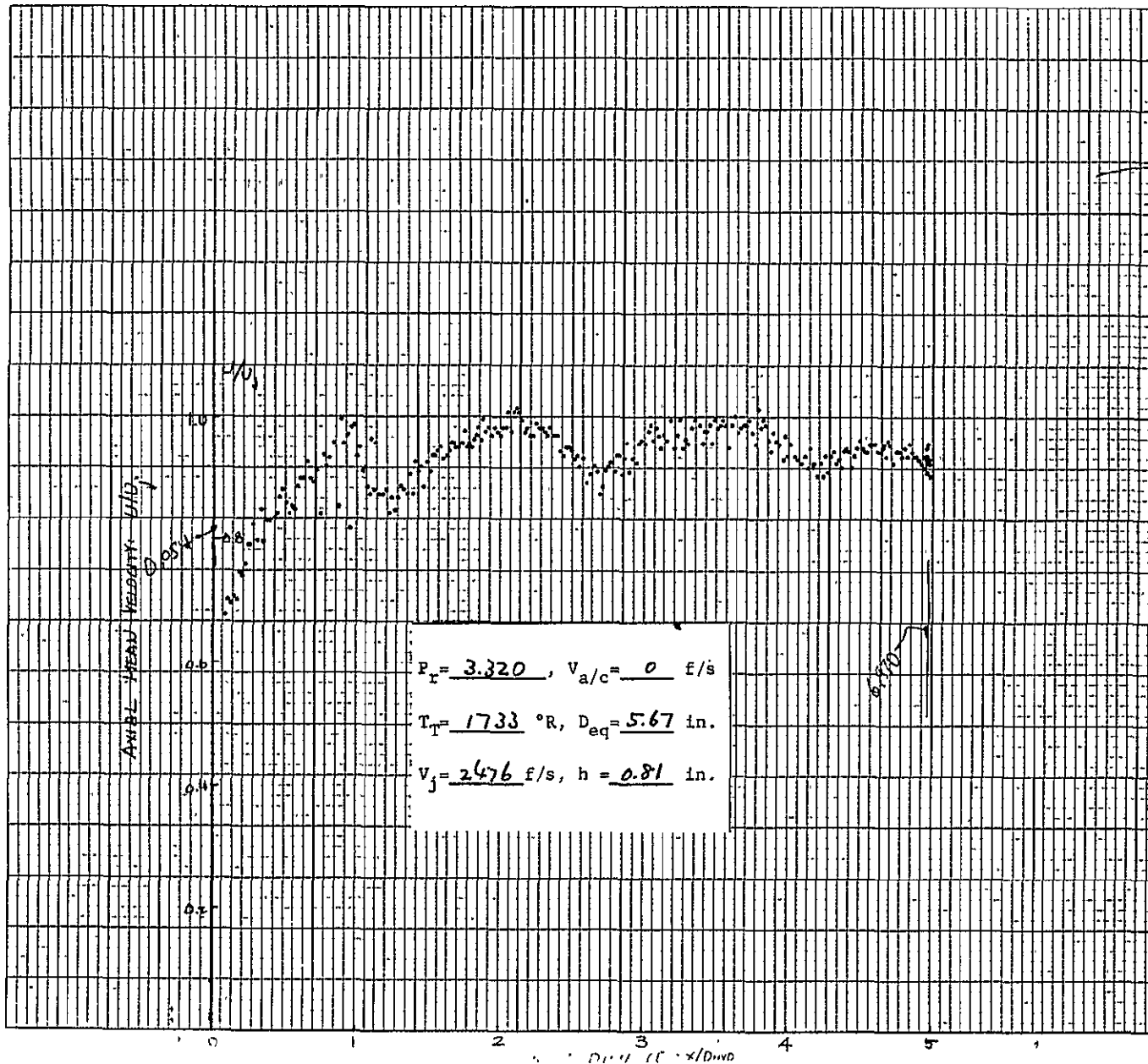
NO XY X

944
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
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DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 321	
PLOT IDENTIFICATION: G - 134	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- 317 TO H- 321	

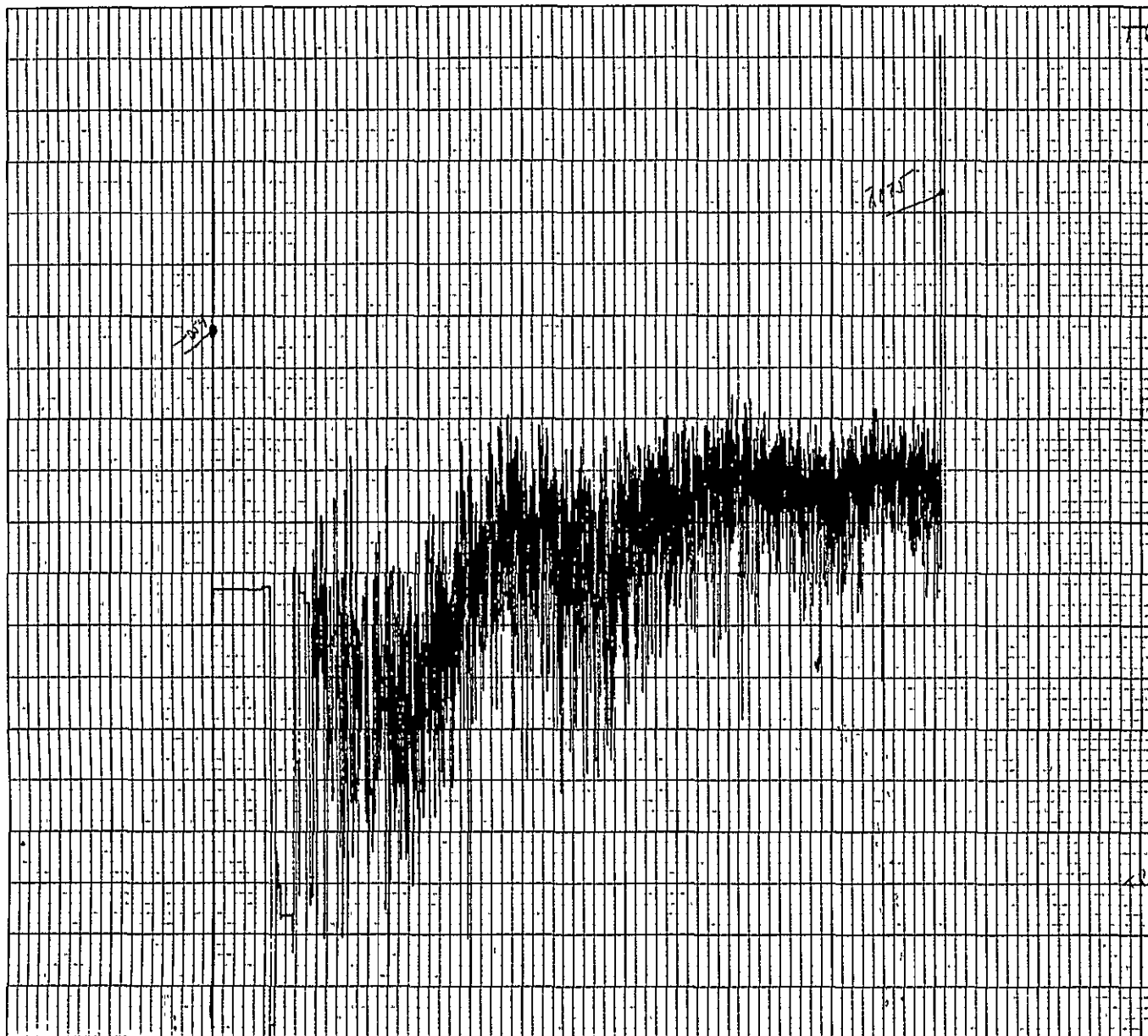
ORIGINAL PAGE 19
OF POOR QUALITY



DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 32/	
PLOT IDENTIFICATION: G - 135	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

916-

RECORDING CHARGE
GRAPHIC CONTROLS CORP. ON
BUFFALO NEW YORK
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DATE: 10/15/81 NOZZLE: #3

TEST POINT: L.V. - ; ACOUSTIC - 32/

PLOT IDENTIFICATION: G - 136

TRAVERSE DETAILS.

AXIAL ☐ : ☒ - ☐ ; OFFSET ☐

RADIAL REF. (☒) - VOLTS ☐

LOCATIONS TRAVERSE - VOLTS ☒

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. (☐) - VOLTS ☒

LOCATIONS TRAVERSE - VOLTS ☒

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 4/3 F.P.S./UNIT

HISTOGRAMS: H- TO H-

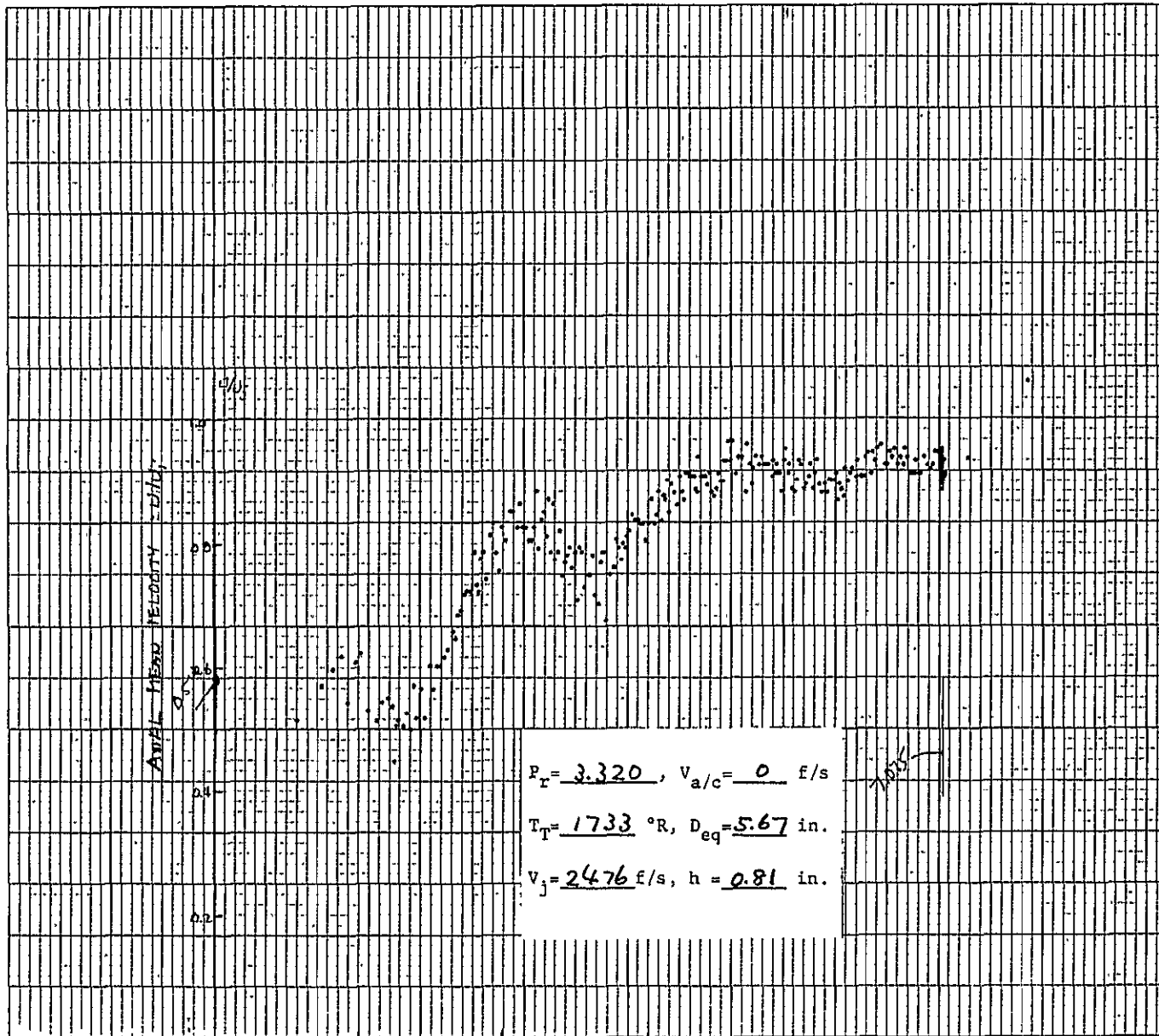
LINE OF LV TRAVERSE

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NO. XY 1101

321
222
104

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$P_r = 3.320$, $V_{a/c} = 0$ f/s

$T_T = 1733$ °R, $D_{eq} = 5.67$ in.

$V_j = 2476$ f/s, $h = 0.81$ in.

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 321	
PLOT IDENTIFICATION: G - 137	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.H. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1011 XY No

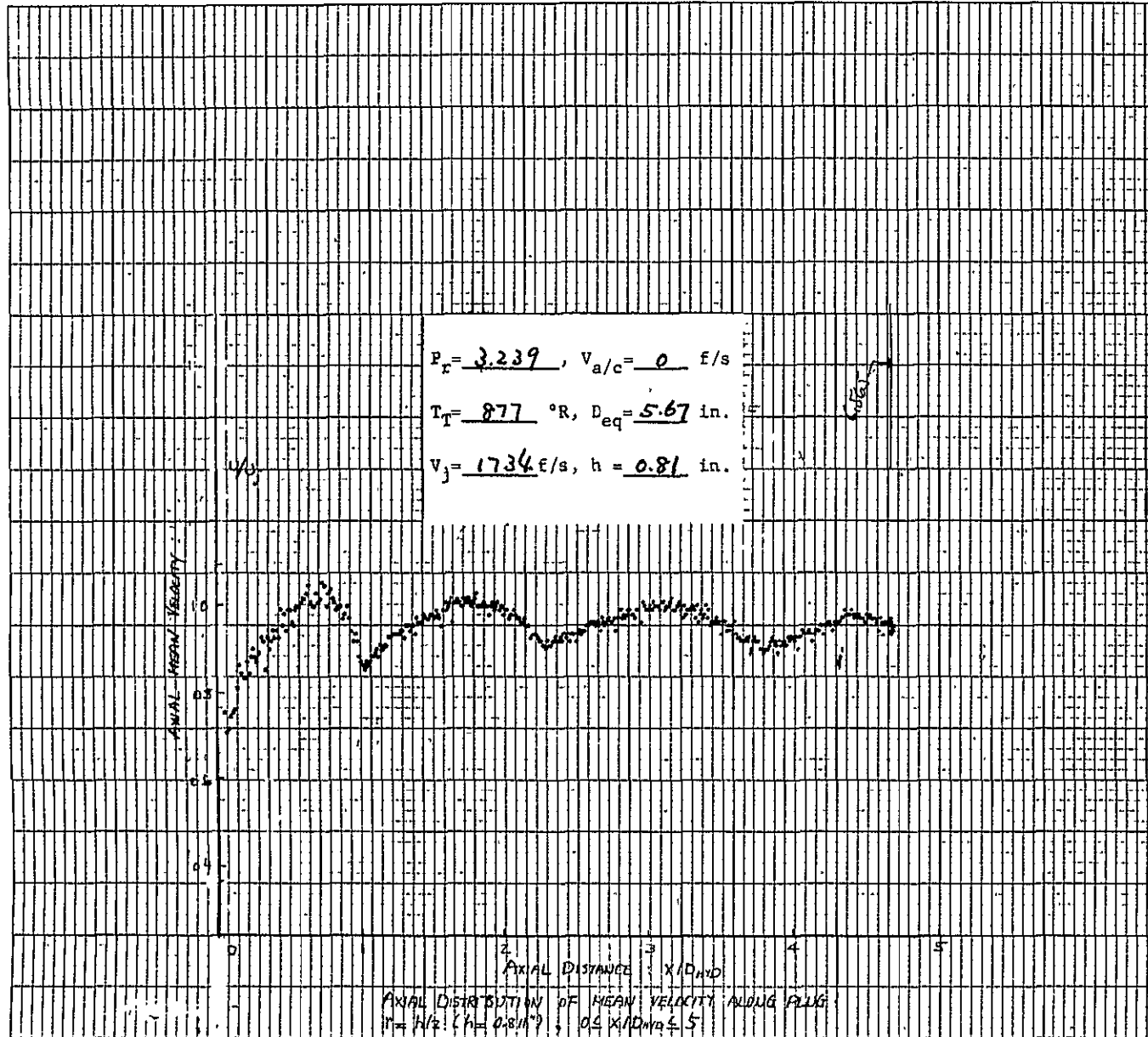
949

REPRODUCTION OF ORIGINAL RECORDING
NOT TO BE USED FOR
REPRODUCTION
EXCEPT FOR
REPRODUCTION



DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 13/3
PLOT IDENTIFICATION: G - 138	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 4/3 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

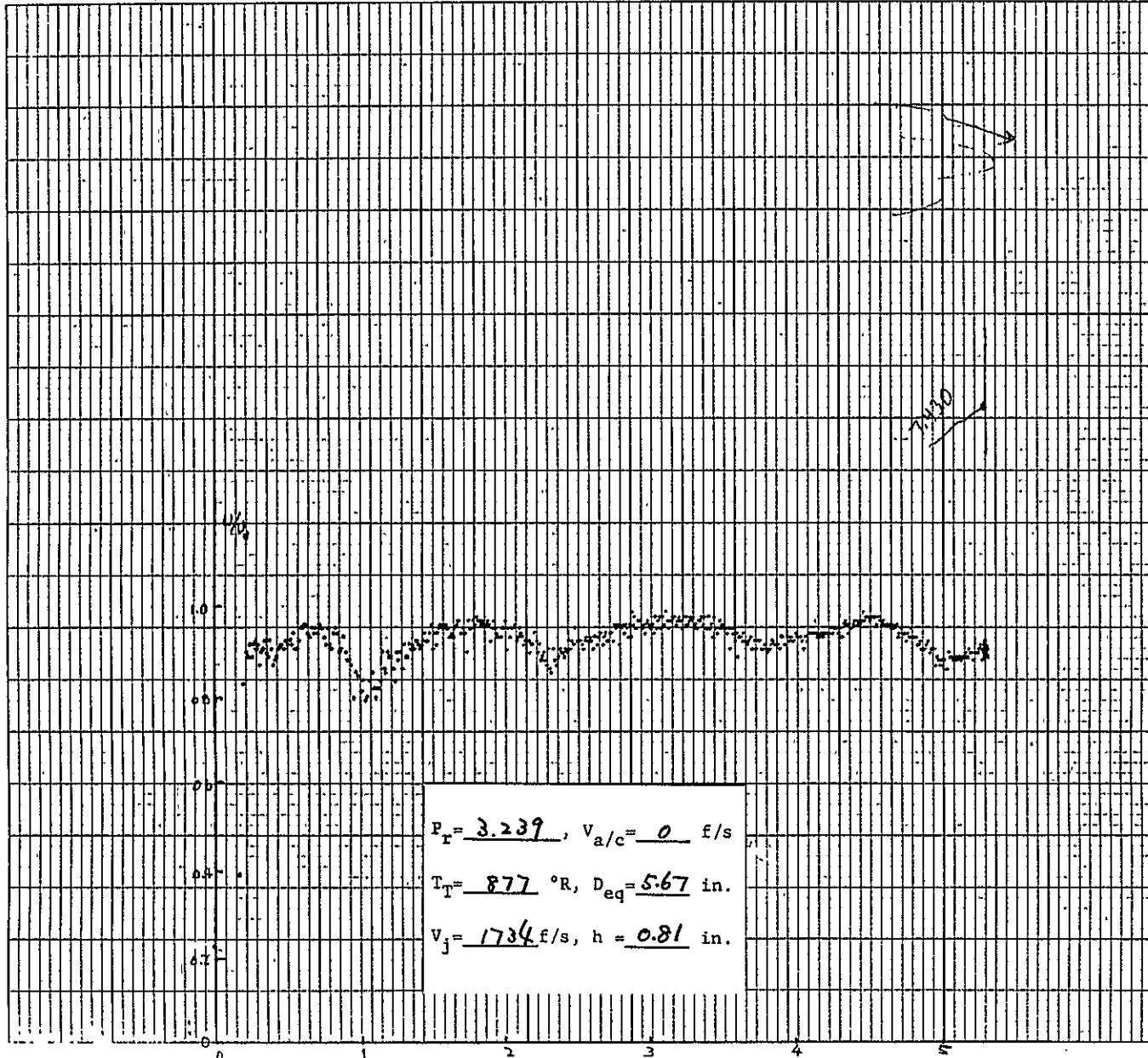
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OF POOR QUALITY



DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 1313	
PLOT IDENTIFICATION: G - 139	
TRAVERSE DETAILS	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS: 2.22 INCH/UNIT	
Y-AXIS: 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 1313	
PLOT IDENTIFICATION: G - 140	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (') -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 4/3 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



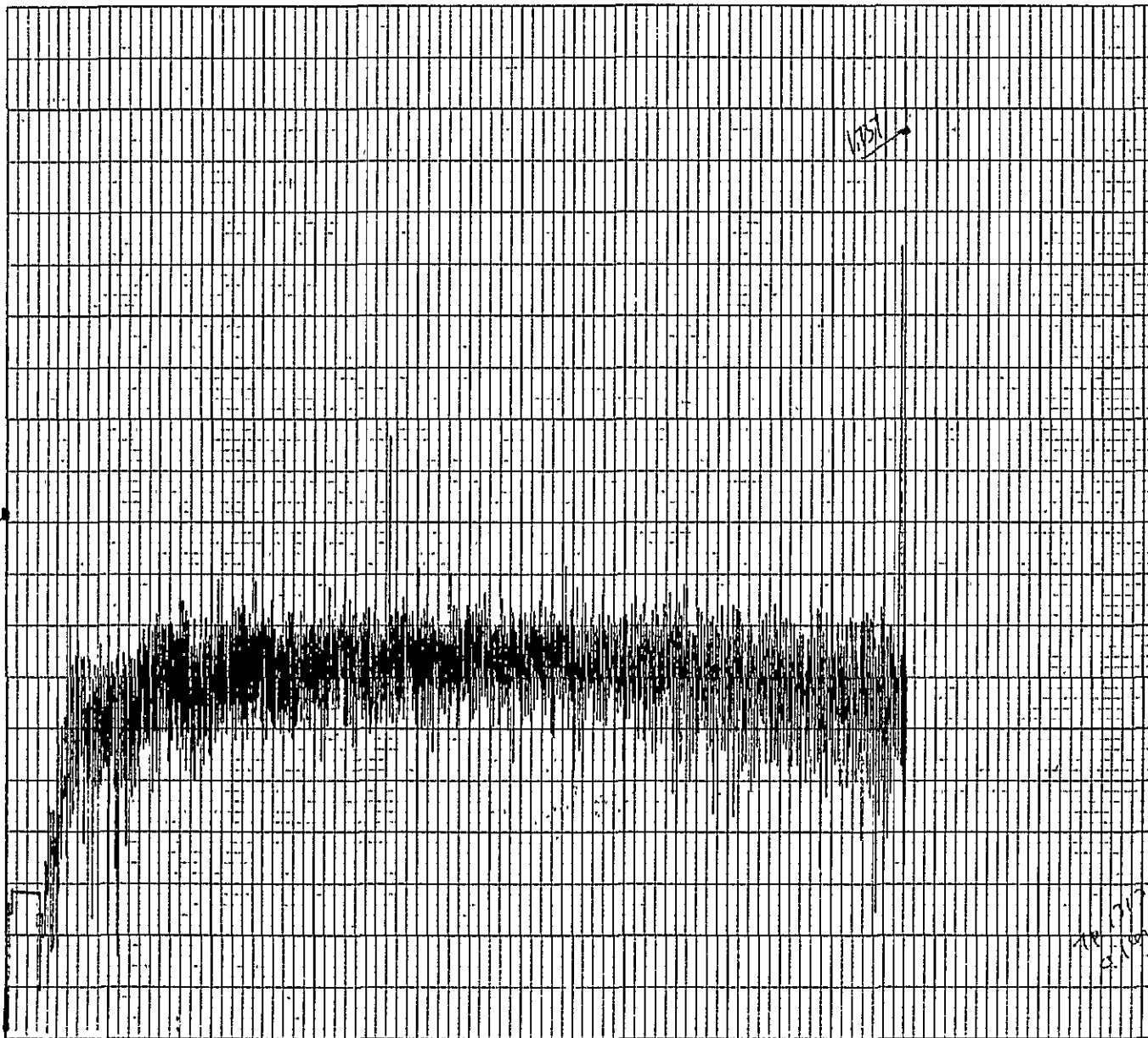
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 13A3
PLOT IDENTIFICATION: G - 14/	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (C) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 4A3 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

953

NO. XY 1101

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870



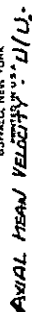
11357

11357
2.10V

DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 1313	
PLOT IDENTIFICATION: G - 142	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS: TRAVERSE -	VOLTS $R_2 = 0$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS X_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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GRAPHIC CONTROLS CORPORATION
2 JEFFALO, NEW YORK
REGISTERED IN U.S.A.
AXIAL MEAN VELOCITY - U/U_∞


$$V_1 = \underline{1734} \text{ f/s}, h = \underline{0.81} \text{ in.}$$

FIGURE

AXIAL DISTRIBUTION OF CENTERLINE MEAN VELOCITY
IN THE DOWNSTREAM OF CENTER PLUG

DATE: 10/15/81 NOZZLE: #3

TEST POINT: L.V. - ; ACOUSTIC - 1313

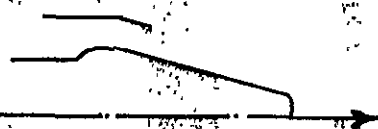
PLOT IDENTIFICATION: G - 143

TRAVERSE DETAILS.

AXIAL ☒ : C - ☐ ; OFFSET - ☐
RADIAL REF. (C) - VOLTS R_{12} = 0
LOCATIONS TRAVERSE - VOLTS R_{12}
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X_{eq}
LOCATIONS TRAVERSE - VOLTS X_{eq}

SCALE : X-AXIS= 7.08 INCH/UNIT
Y-AXIS= 413 F.P.S./UNIT

HISTOGRAMS: H- TO H-



LINE OF TRAVERSE

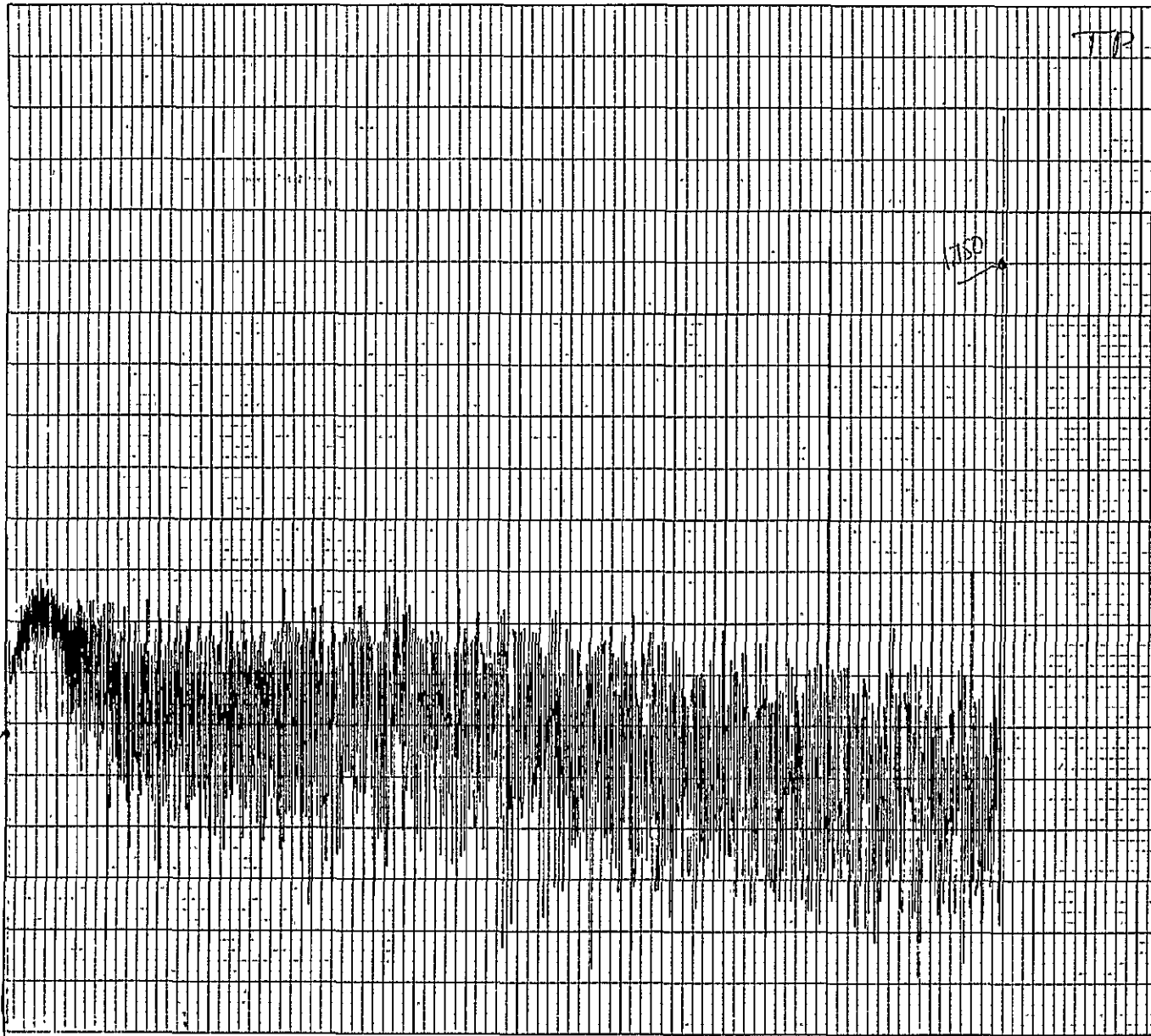
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1011X ON

955

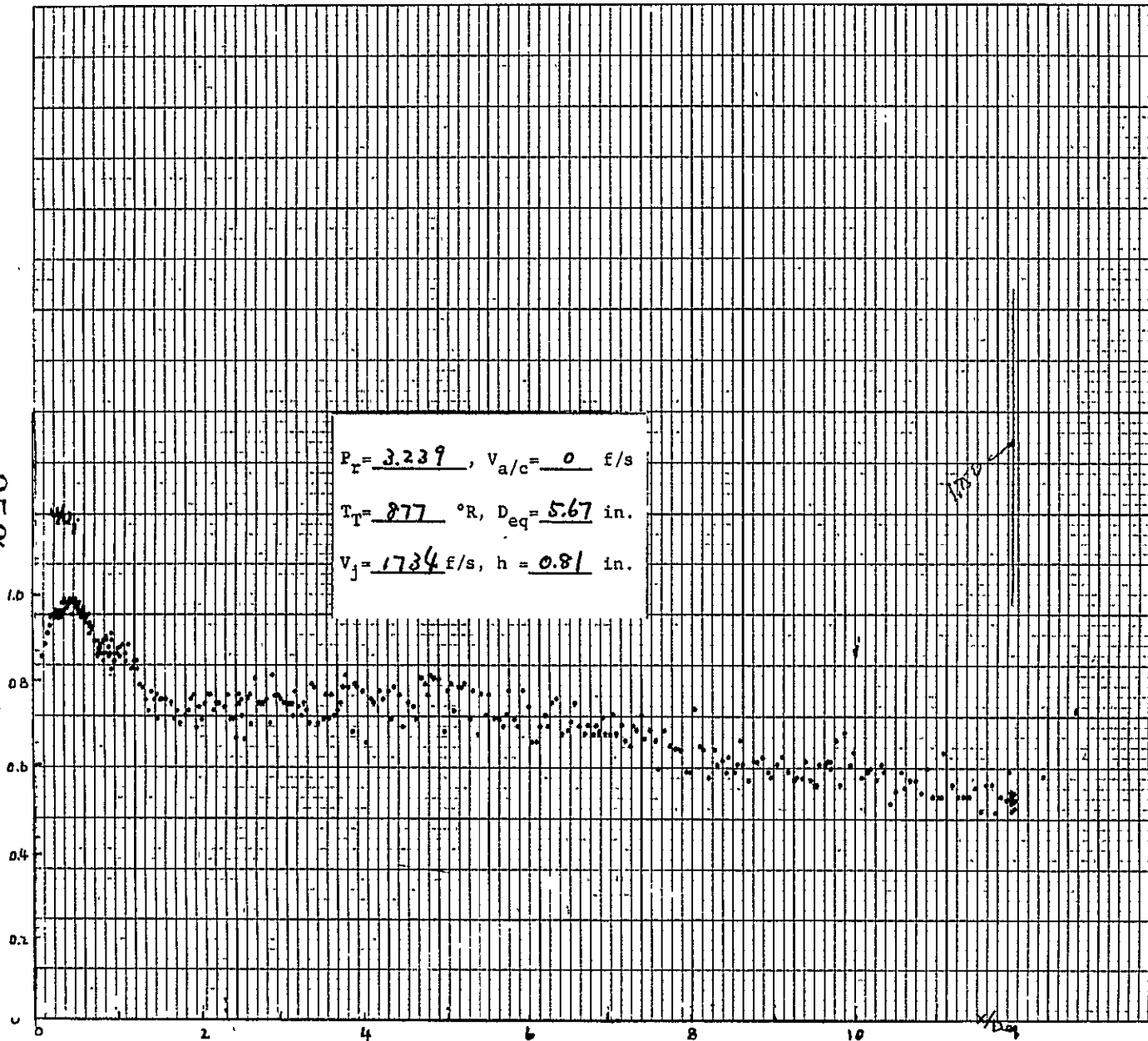
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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
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0.781



DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 1313	
PLOT IDENTIFICATION: G - 144	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) - VOLTS R_1	
LOCATIONS, TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () - VOLTS X	
LOCATIONS, TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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4. 556
Ave. L. Mean Velocity: 469.56

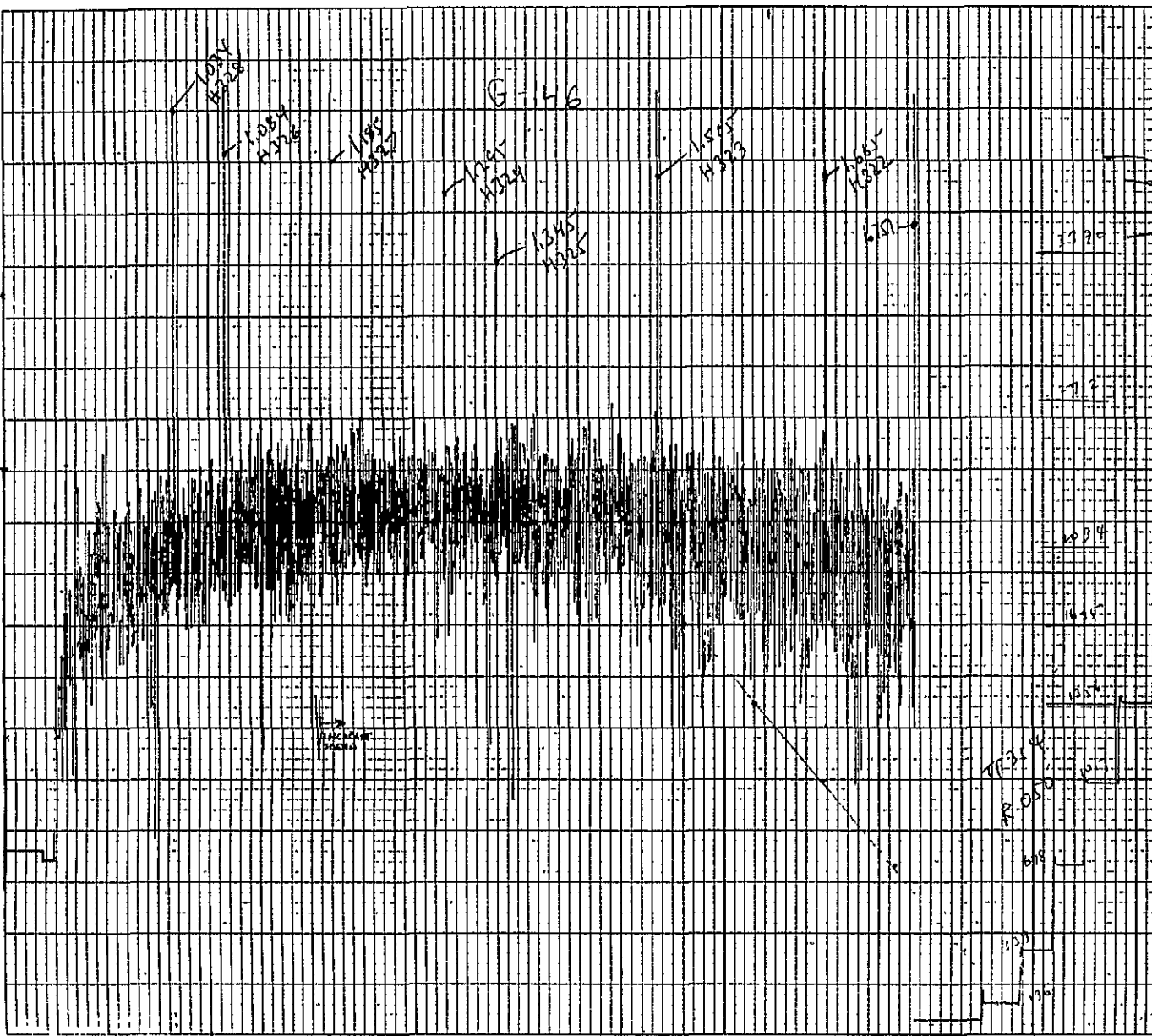
DATE: 10/15/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 13/3
PLOT IDENTIFICATION: 6 - 145	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> : OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. <input type="checkbox"/> : N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

Model 3
Test Point 314

NO. XY 1101

958

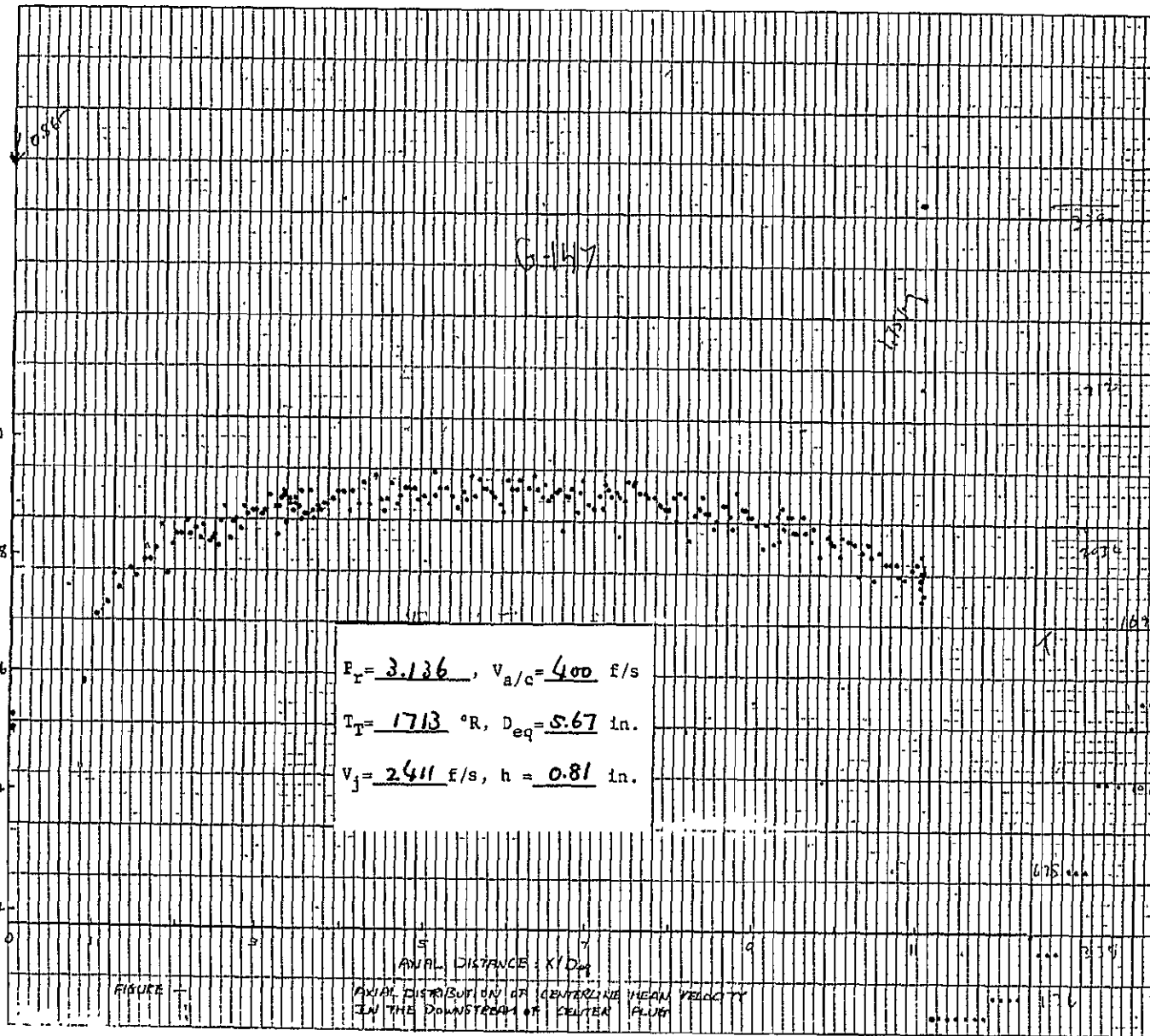
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BUFFALO, NEW YORK
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DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 314	
PLOT IDENTIFICATION: G - 146	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS $X =$
LOCATIONS: TRAVERSE -	VOLTS $D =$
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- 322 TO H- 328	

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AXIAL MEAN VELOCITY: v/u



$P_r = 3.136$, $v_{a/c} = 400$ f/s

$T_r = 1713$ °R, $D_{eq} = 5.67$ in.

$v_j = 2411$ f/s, $h = 0.81$ in.

FIGURE 1

AXIAL DISTRIBUTION OF CENTERLINE MEAN VELOCITY
IN THE DOWNSTREAM OF CENTER PLATE

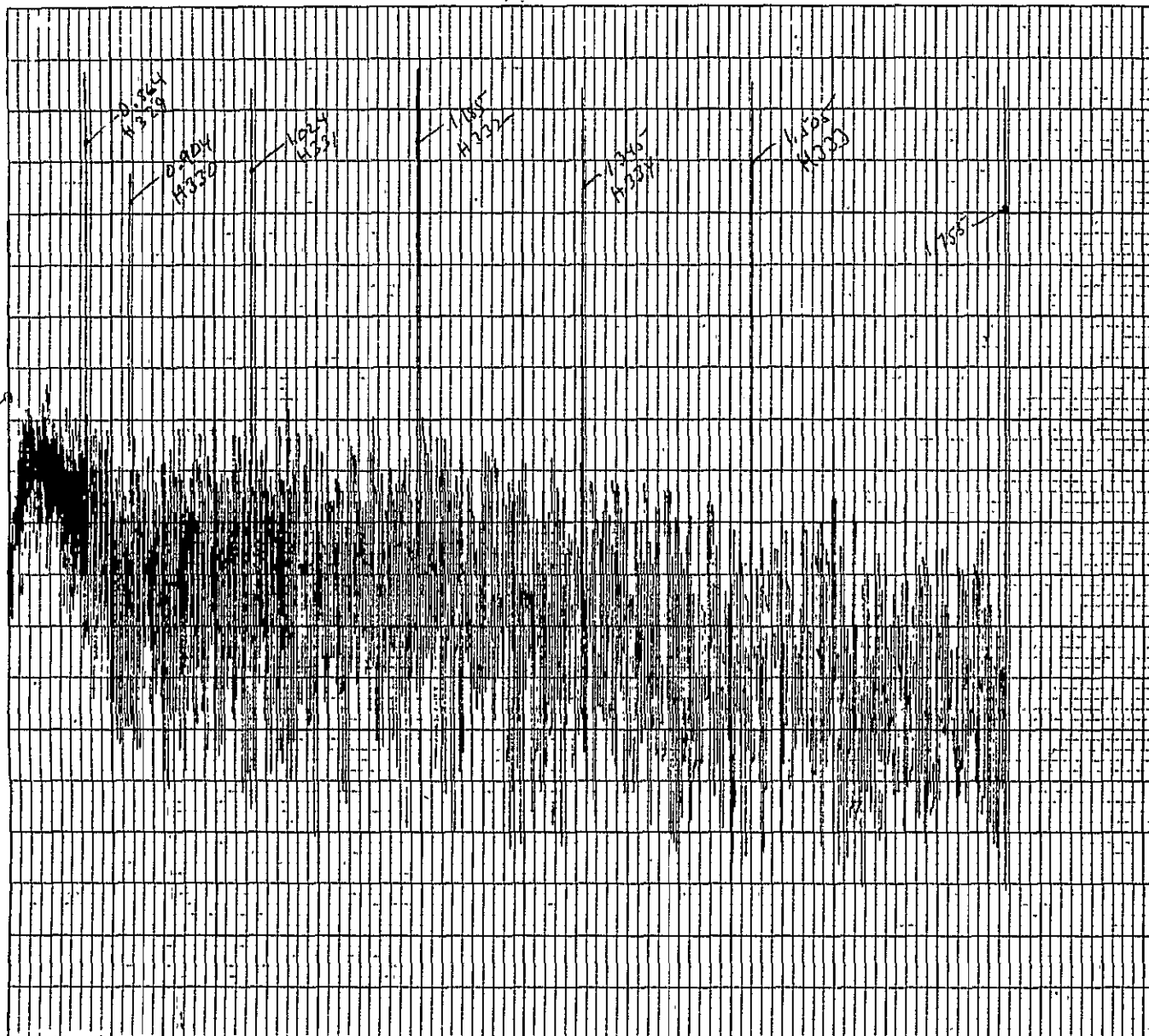
DATE: 10/16/81	NOZZLE: # 3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 147	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS $R_2 = 0$
RADIAL \square : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS = 7.08 INCH/UNIT	
Y-AXIS = 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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NO XY1101

966

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DATE: 10/16/81	NOZZLE: # 3
TEST POINT: L.V. - ; ACOUSTIC - 314	
PLOT IDENTIFICATION: G - 148	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> ; REF. () -	OFFSET - <input type="checkbox"/>
RADIAL <input type="checkbox"/> ; REF. () -	VOLTS $R_1 = 1$
LOCATIONS: TRAVERSE -	VOLTS $R_2 = 1$
RADIAL <input type="checkbox"/> ; E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL <input type="checkbox"/> ; REF. () -	VOLTS $X = 1$
LOCATIONS: TRAVERSE -	VOLTS $D = 1$
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 4.18 F.P.S./UNIT	
HISTOGRAMS: H- 329 TO H- 333	

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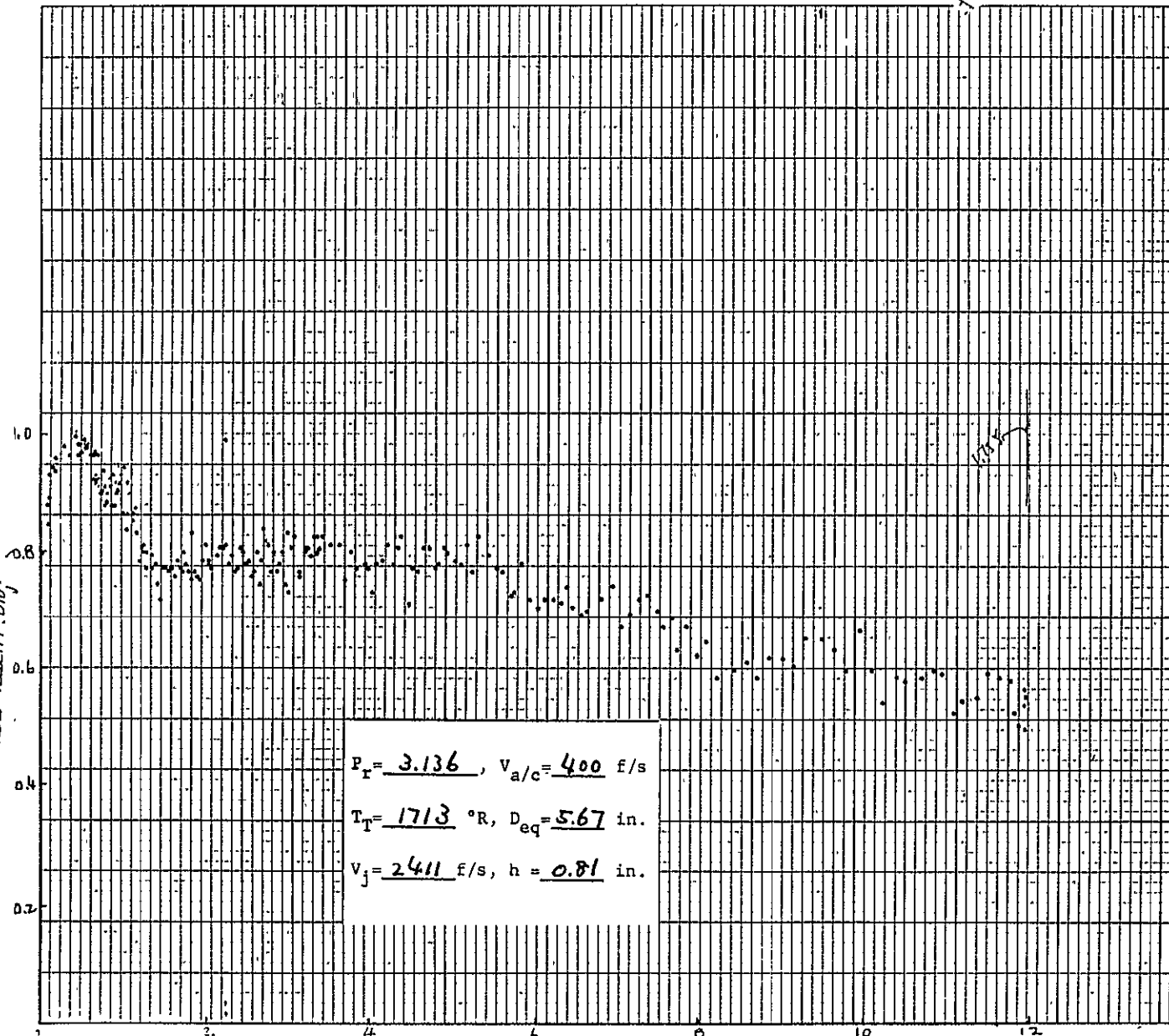
No XY 1101

196

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GRAPHIC CONTROLS CORPORATION

ANAL. HEAD TRENCH: 1101



$$P_r = \underline{3.136}, V_{a/c} = \underline{400} \text{ f/s}$$

$$T_T = \underline{1713} \text{ }^\circ\text{R}, D_{eq} = \underline{5.67} \text{ in.}$$

$$V_j = \underline{2411} \text{ f/s}, h = \underline{0.81} \text{ in.}$$

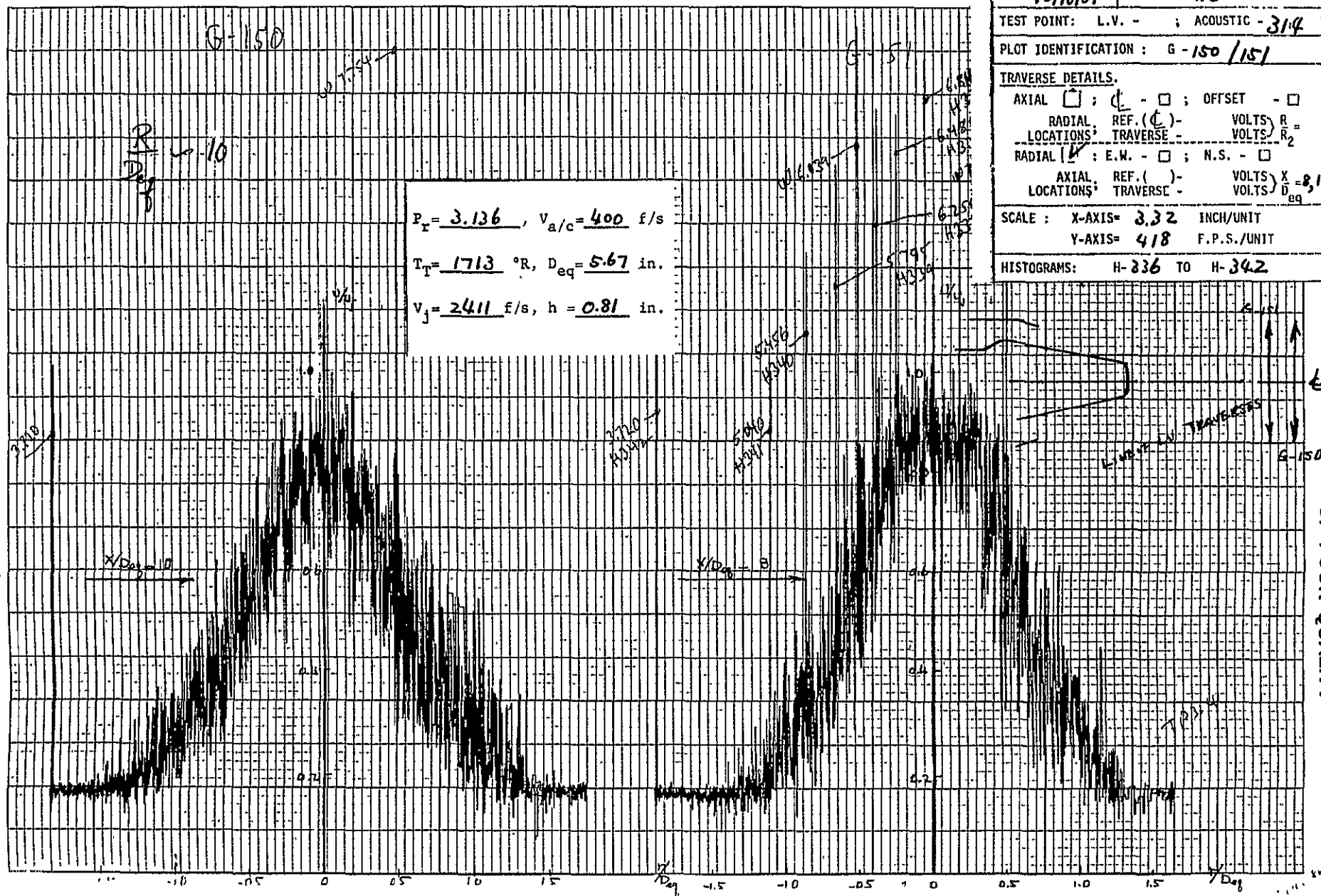
DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 149	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_1 \approx 1$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

ORIGINAL PAGE 13
OF POOR QUALITY

T.P. 314 RADIAL DISTR. OF MEAN VELOCITY ②

DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 314	
PLOT IDENTIFICATION: G-150/151	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> ; <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	$D_{eq} = 8.10$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H-336 TO H-342	

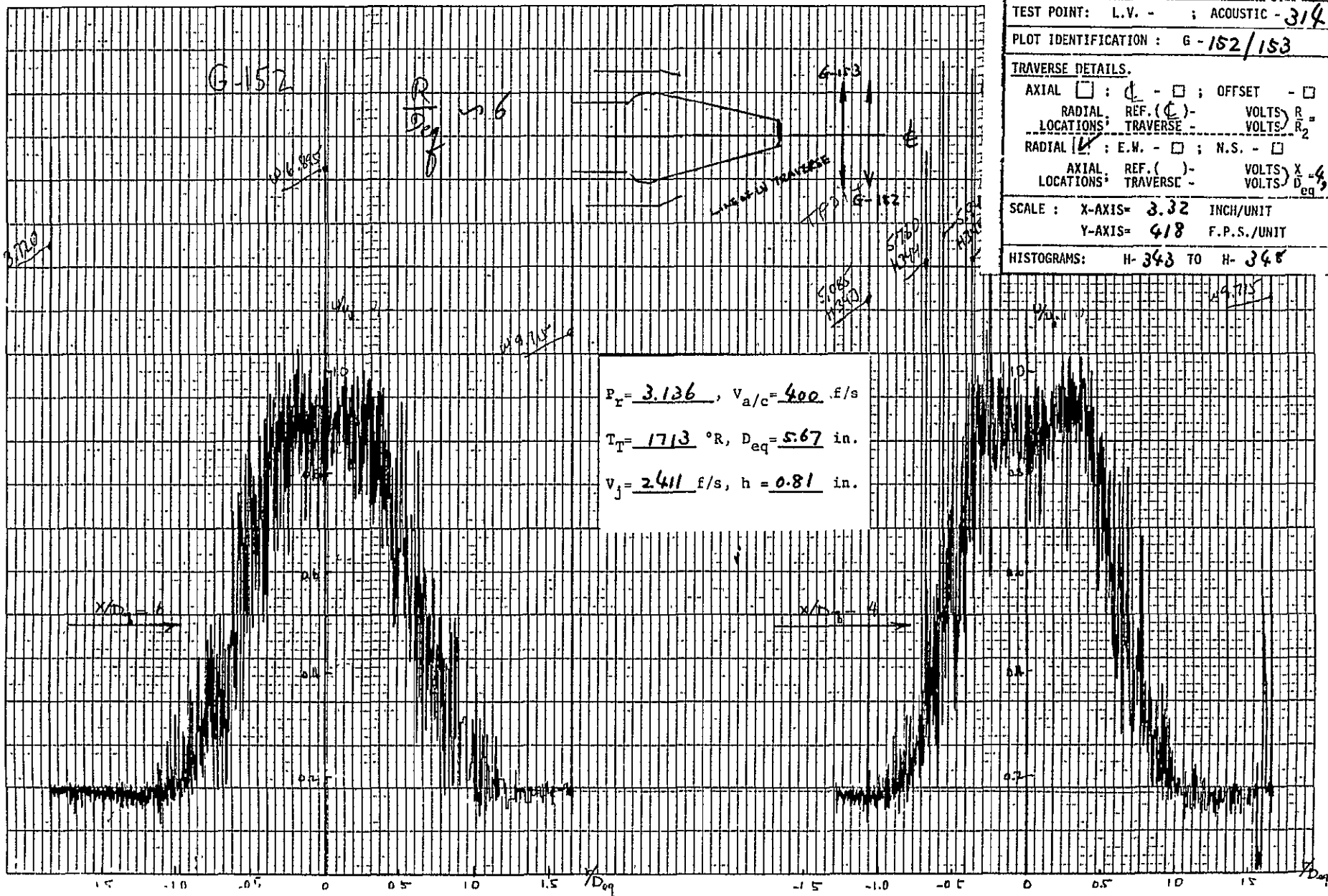
$P_r = 3.136$, $v_{a/c} = 400$ f/s
 $T_r = 1713$ °R, $D_{eq} = 5.67$ in.
 $v_j = 2411$ f/s, $h = 0.81$ in.



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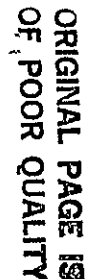
T.P. 314 RADIAL DISTR. OF MEAN VELOCITY ②

DATE: 10/16	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G-152/153	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- 343 TO H- 348	



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GRAPHIC CONTROLS COMPANY,
BUFFALO, NEW YORK



DATE: 10/16/81 NOZZLE: #3

TEST POINT: L.V. - ; ACOUSTIC - 314

PLOT IDENTIFICATION: G - 154/155

TRAVERSE DETAILS.

AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐

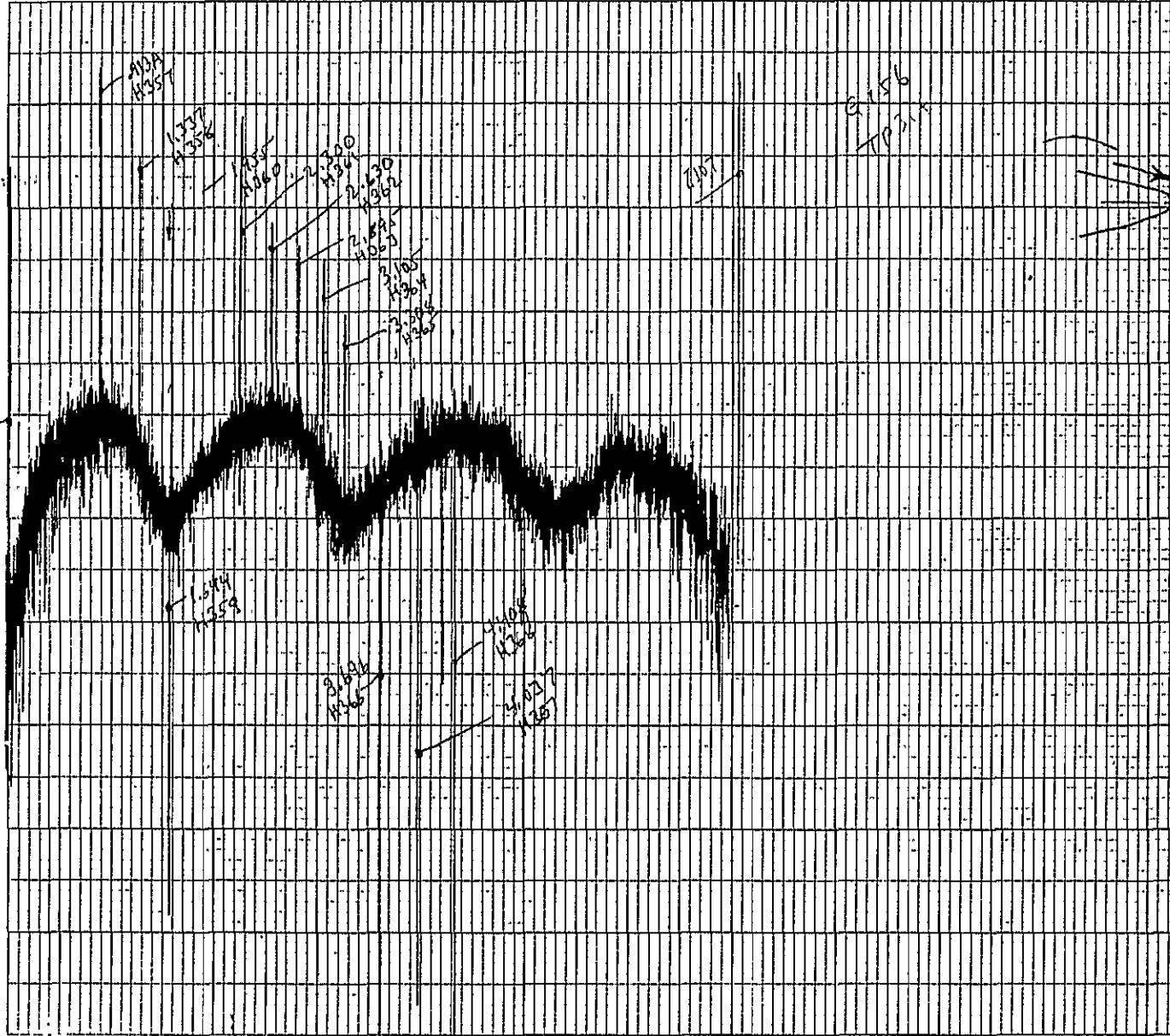
RADIAL REF. () - VOLTS } R
LOCATIONS TRAVERSE - VOLTS } R₂

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS } X
LOCATIONS TRAVERSE - VOLTS } 0, 2
eq

SCALE: X-AXIS- 3.32 INCH/UNIT
Y-AXIS- 418 F.P.S./UNIT

HISTOGRAMS: H- 350 TO H- 356

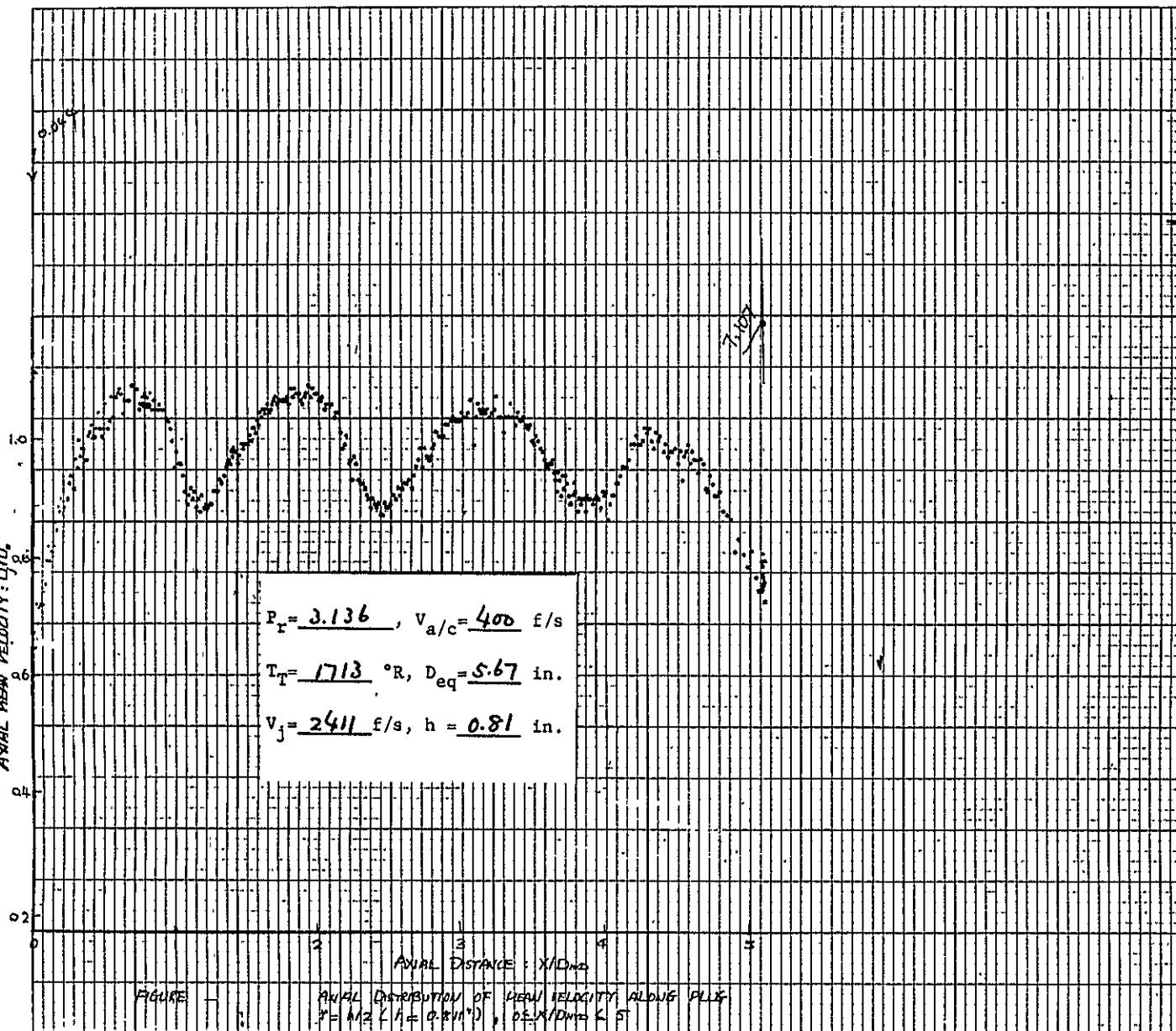


DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 156	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H-357 TO H-368	

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NO XY 1101

AXIAL MEAN VELOCITY: 414 

FIGURE

AXIAL DISTRIBUTION OF MEAN VELOCITY ALONG PIPE
 $\gamma = 1/2$ ($h = 0.811$ "), DEVIATION 2.5

DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 157	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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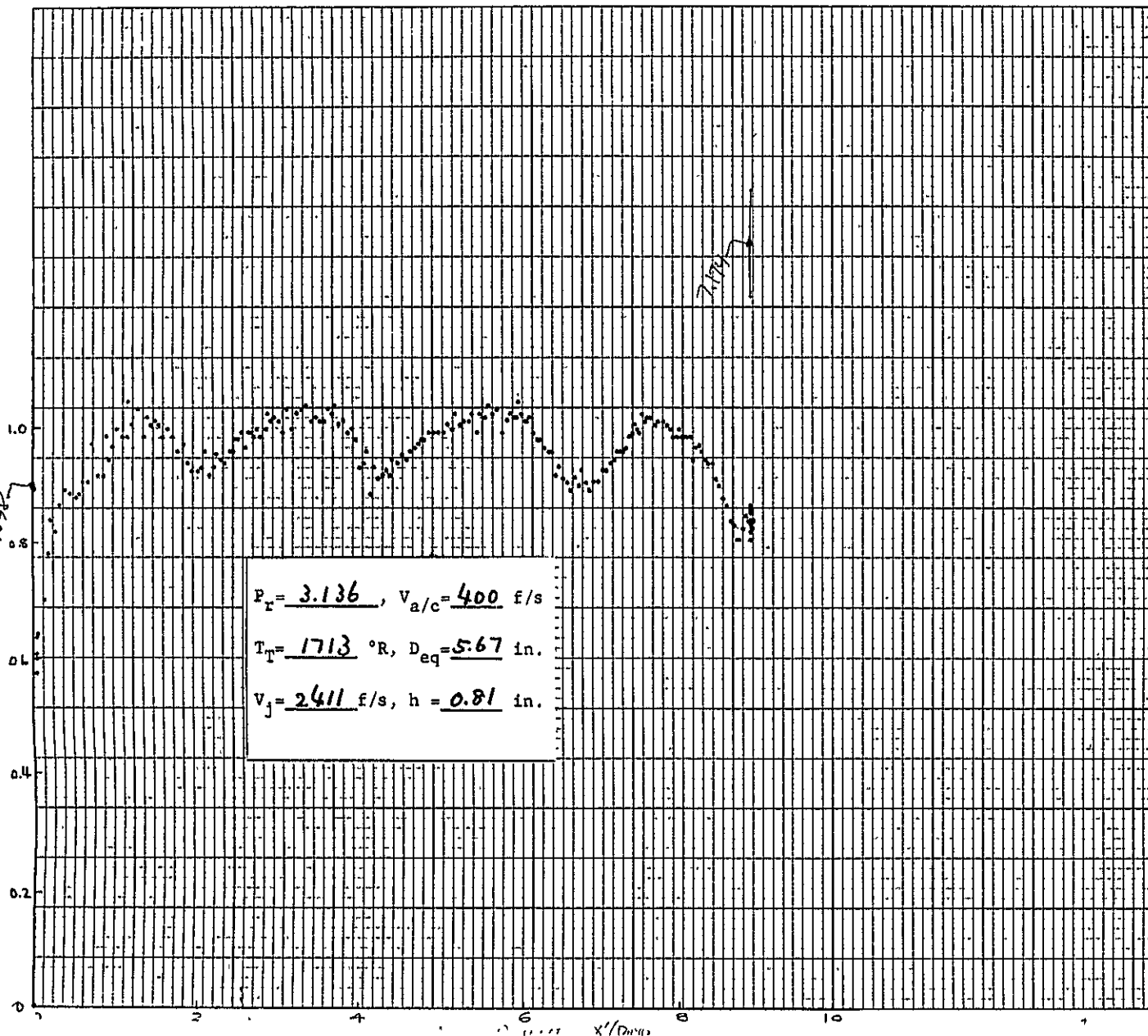
0.048

367



DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 314	
PLOT IDENTIFICATION: G - 158	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

896
8000



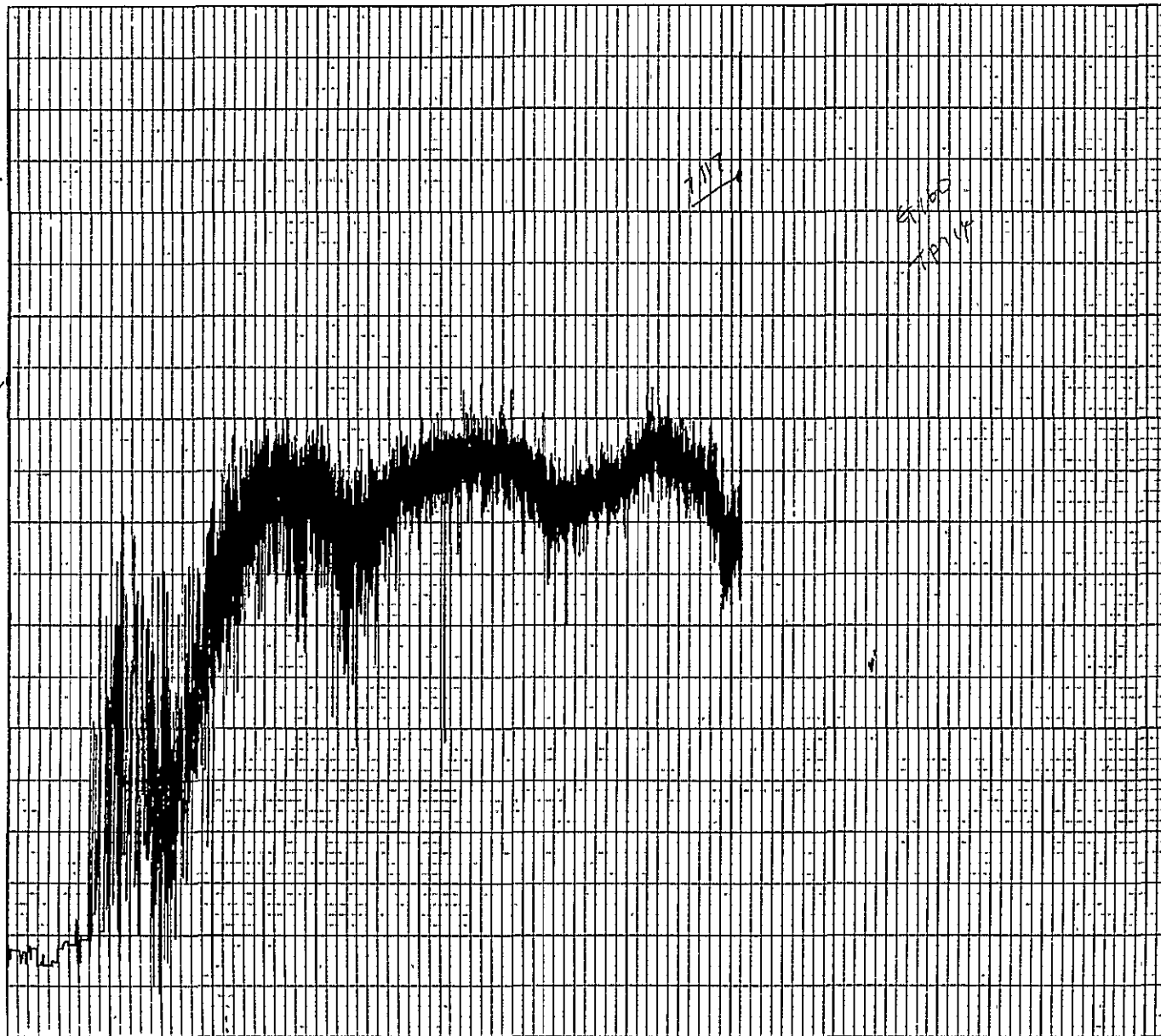
$P_r = 3.136$, $V_{a/c} = 400$ f/s

$T_T = 1713$ °R, $D_{eq} = 5.67$ in.

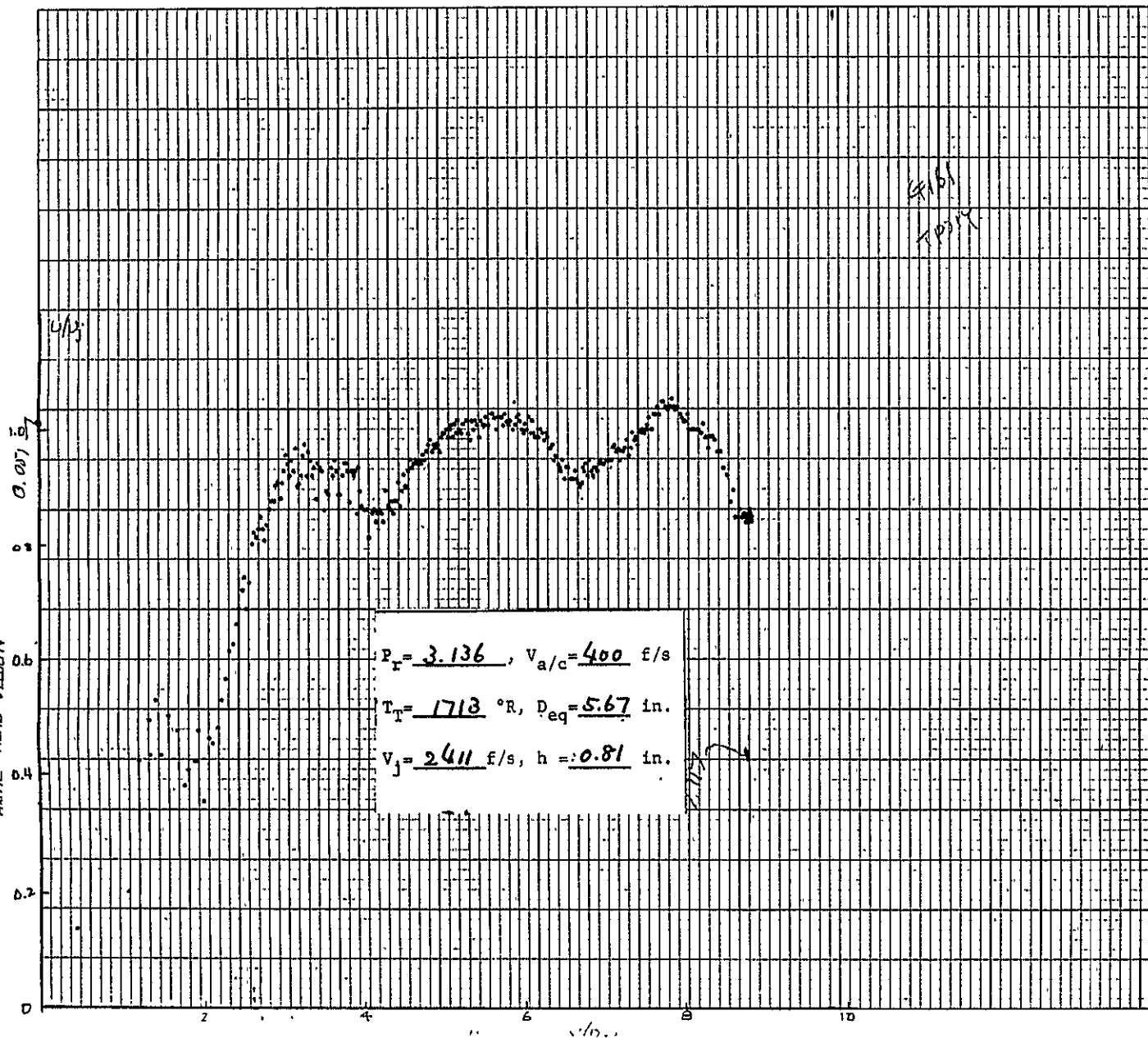
$V_j = 2411$ f/s, $h = 0.81$ in.

DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 159	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

0.057



DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 160	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1 =
LOCATIONS TRAVERSE -	VOLTS R_2 =
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X =
LOCATIONS TRAVERSE -	VOLTS D_{eq} =
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 10/16/81 NOZZLE: #3

TEST POINT: L.V. - ; ACOUSTIC - 314

PLOT IDENTIFICATION: G - 161

TRAVERSE DETAILS.

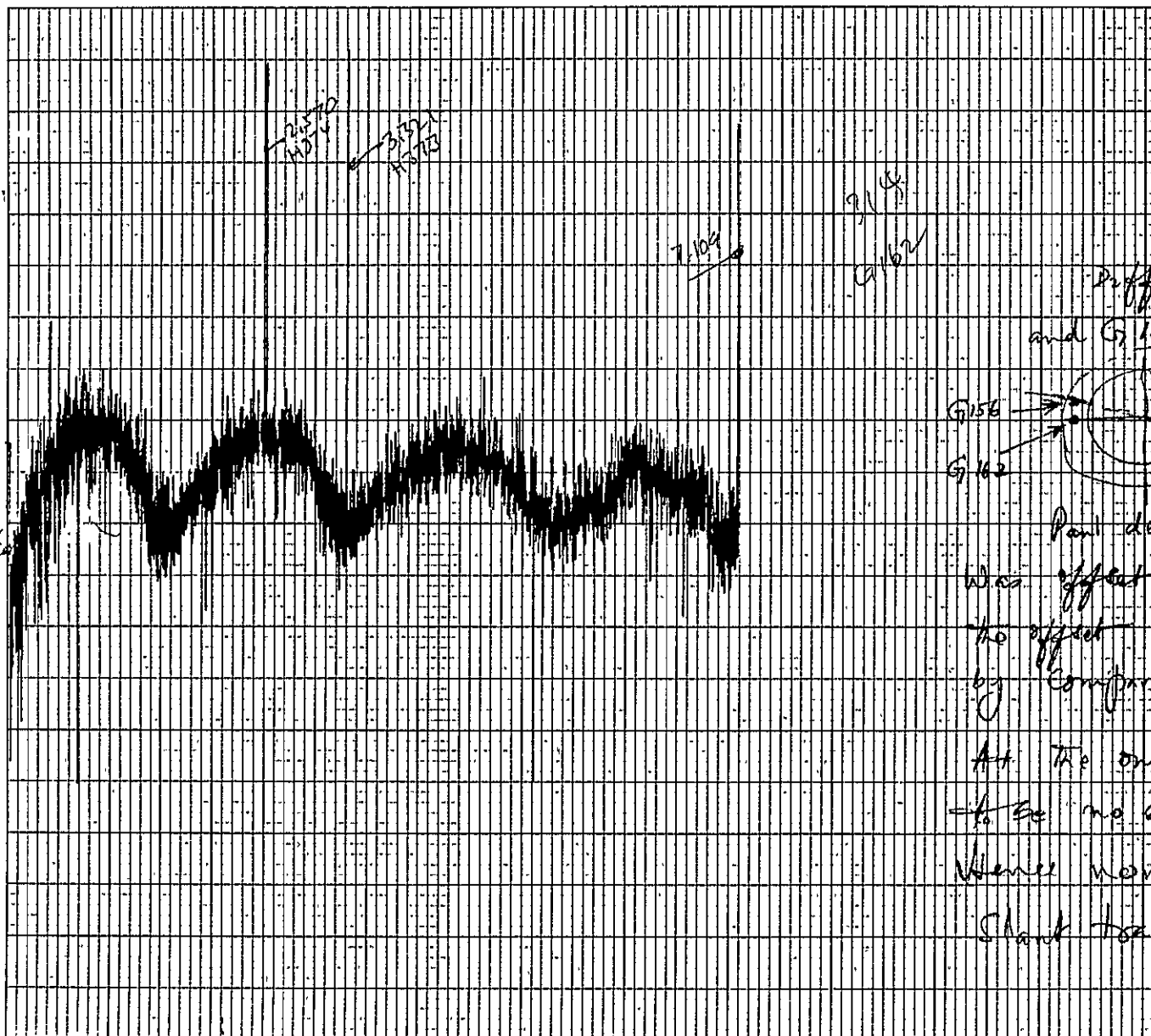
AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐
RADIAL REF. (☒) - VOLTS R_1 =
LOCATIONS TRAVERSE - VOLTS R_2 =

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. (☐) - VOLTS X =
LOCATIONS TRAVERSE - VOLTS D_{eq} =

SCALE : X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 418 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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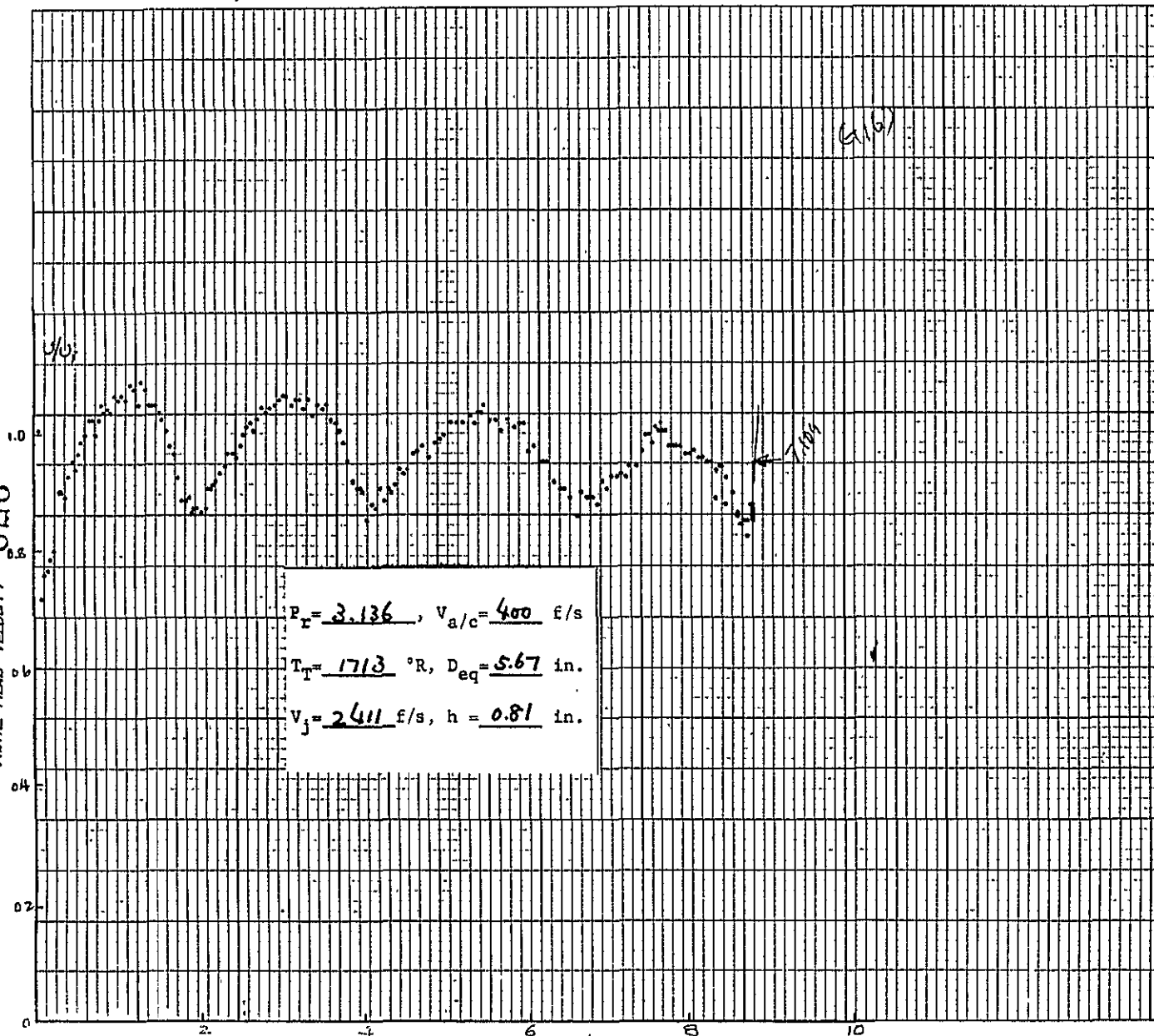
DATE: 10/16/81	NOZZLE: # 3
TEST POINT: L.V. -	ACOUSTIC - 314
PLOT IDENTIFICATION: G - 162	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

Point determined
Was effect and effect of
the effect can be determined
by comparison of G162 with G158
At the onset, there appears
to be no significant differences.
Hence none of the remaining
shank traverses were
different

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AXIAL MEAN VELOCITY

226



DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 3/4
PLOT IDENTIFICATION: G - 163	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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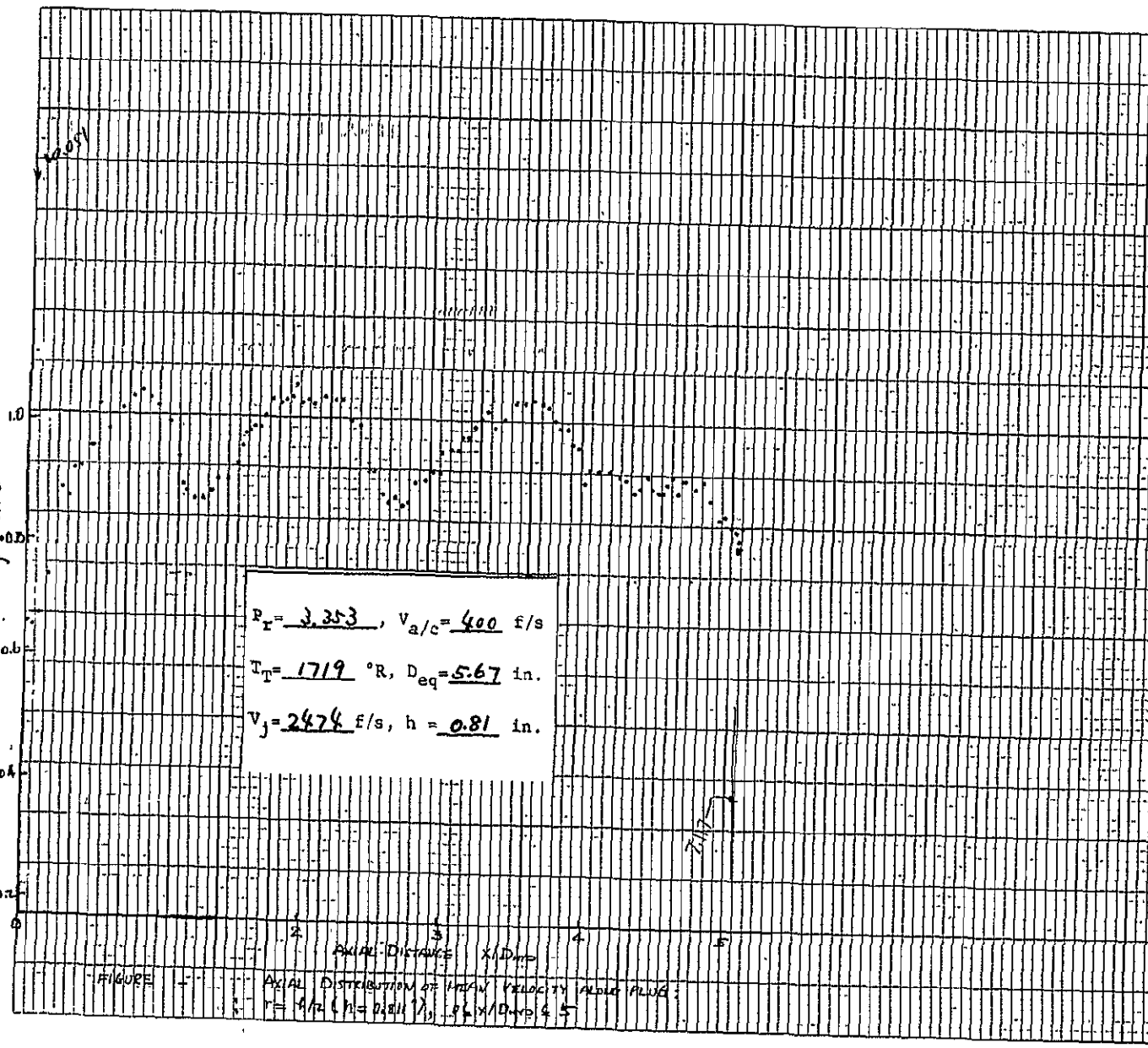
DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 165	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS Y	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 4.18 F.P.S./UNIT	
HISTOGRAMS: H- 375 TO H- 387	

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AXIAL MEAN VELOCITY, U_{avg}

C-4



$$P_r = 3.353, v_{a/c} = 400 \text{ f/s}$$

$$T_1 = 1719^\circ \text{R}, D_{eq} = 5.67 \text{ in.}$$

$$v_j = 2474 \text{ f/s}, h = 0.81 \text{ in.}$$

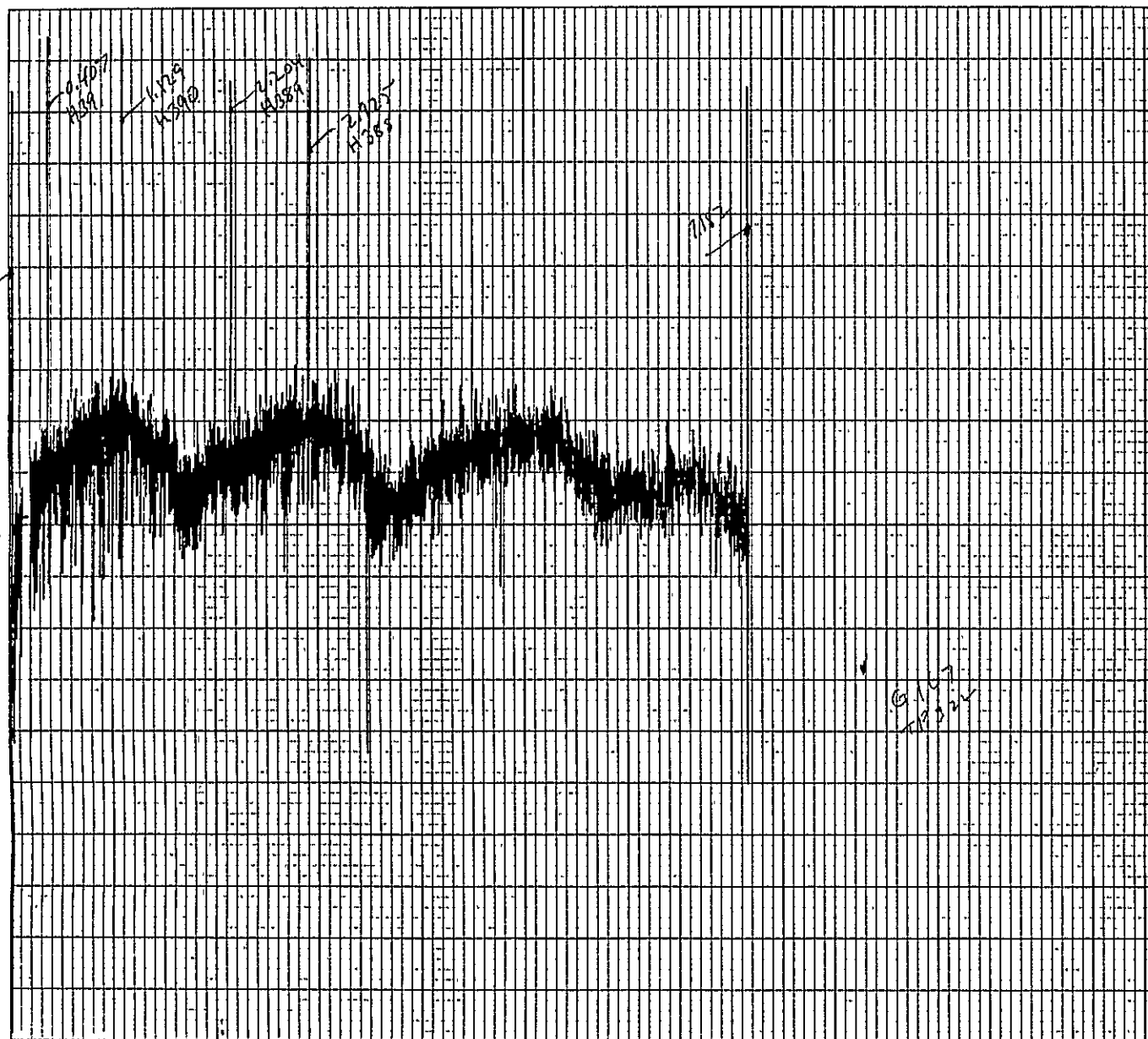
FIGURE 1

AXIAL DISTRIBUTION OF MEAN VELOCITY ALONG PLUG
 $r = 4/2$ (h = 0.81 in), $P_r = 3.353$ and 5

DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 322
PLOT IDENTIFICATION: G - 166	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS Y_{eq}
SCALE : X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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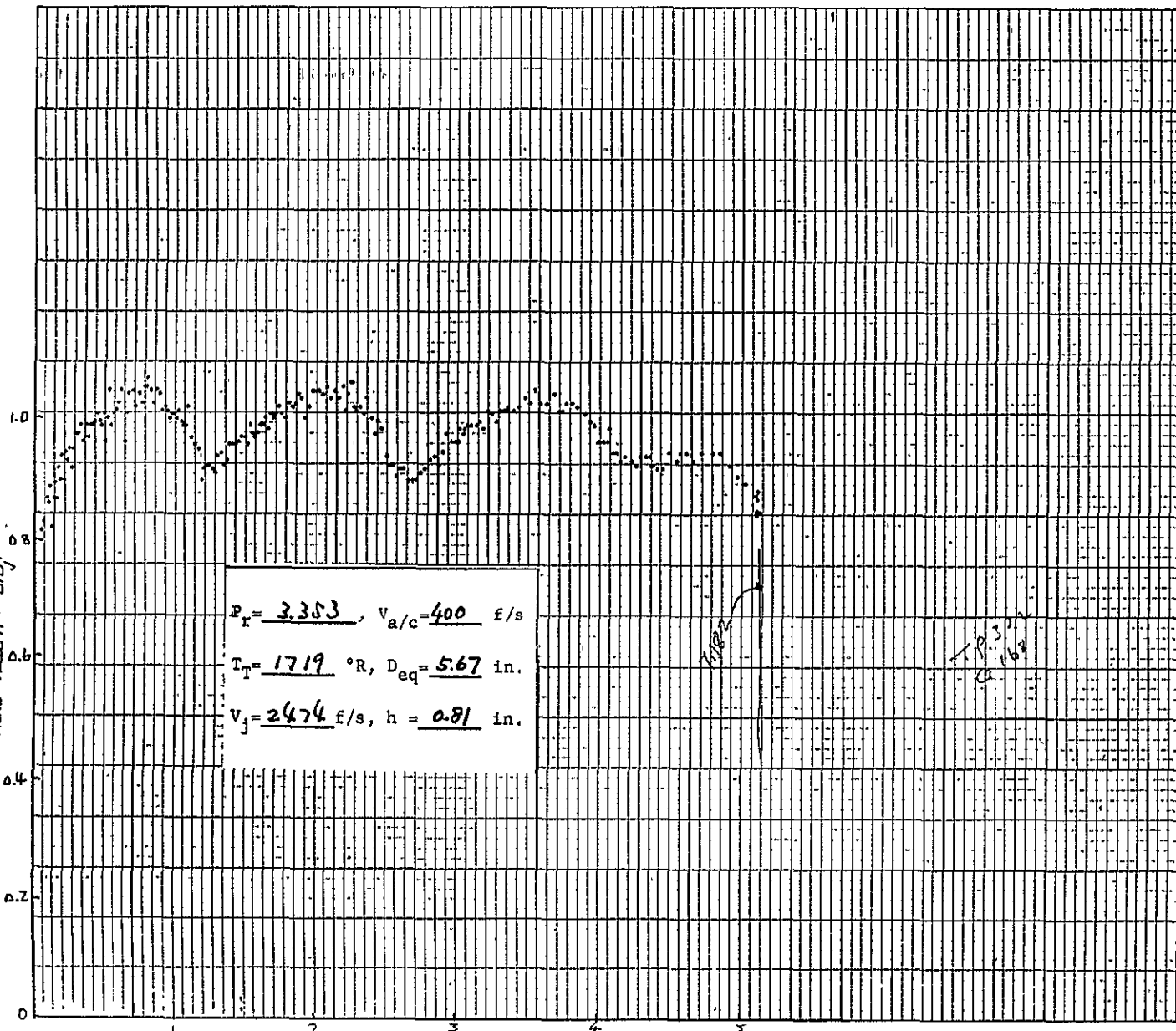
913



DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 167	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS U_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- 388 TO H- 391	

AXIAL FLOW VELOCITY - 116 116

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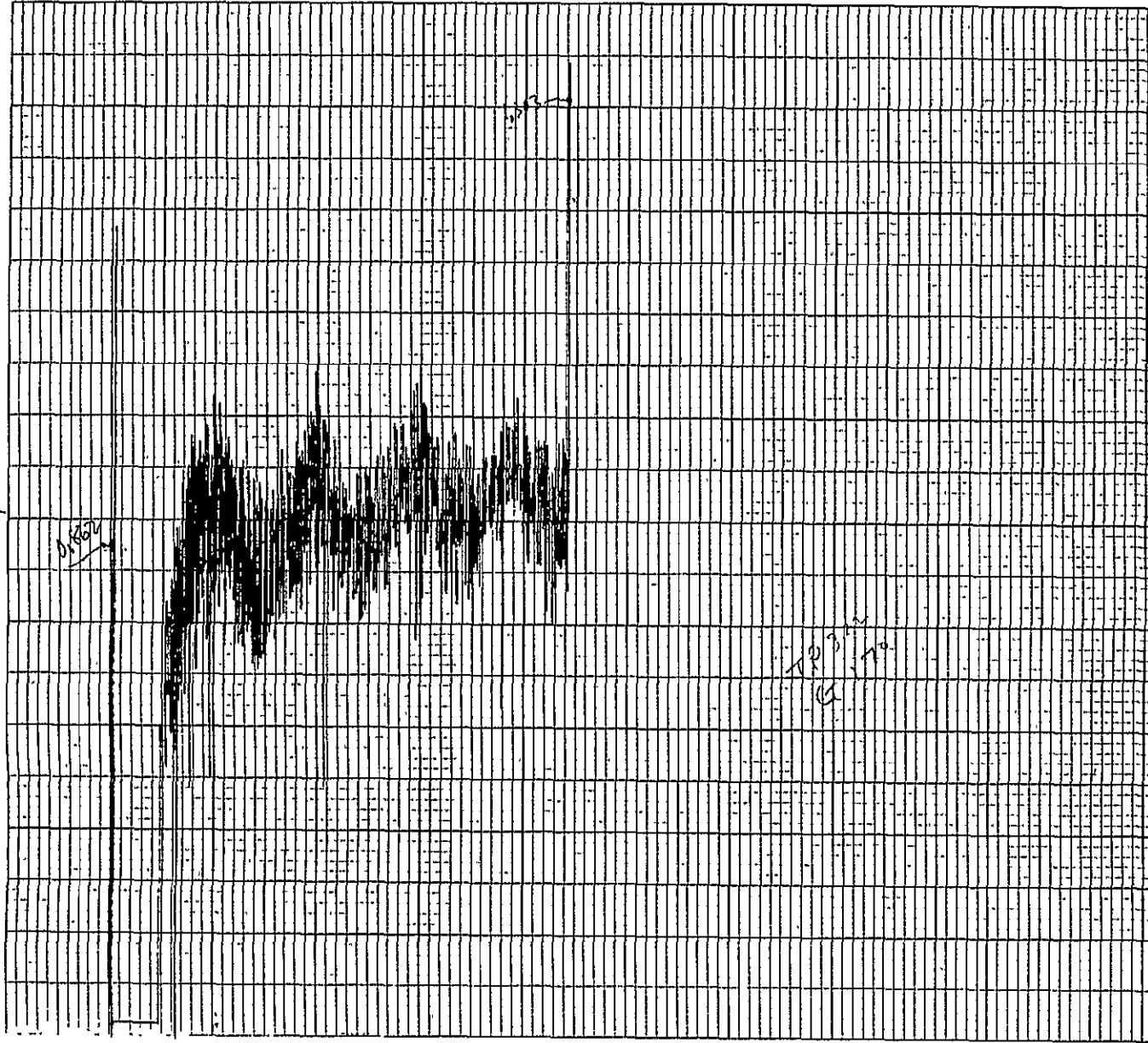
$P_r = 3.383$, $V_{a/c} = 400$ f/s
 $T_T = 1719$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2474$ f/s, $h = 0.81$ in.

DATE: <u>10/16/81</u>	NOZZLE: <u>#3</u>
TEST POINT: L.V. - ; ACOUSTIC - <u>322</u>	
PLOT IDENTIFICATION : G - <u>168</u>	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (<input type="checkbox"/>) - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= <u>2.22</u> INCH/UNIT	
Y-AXIS= <u>418</u> F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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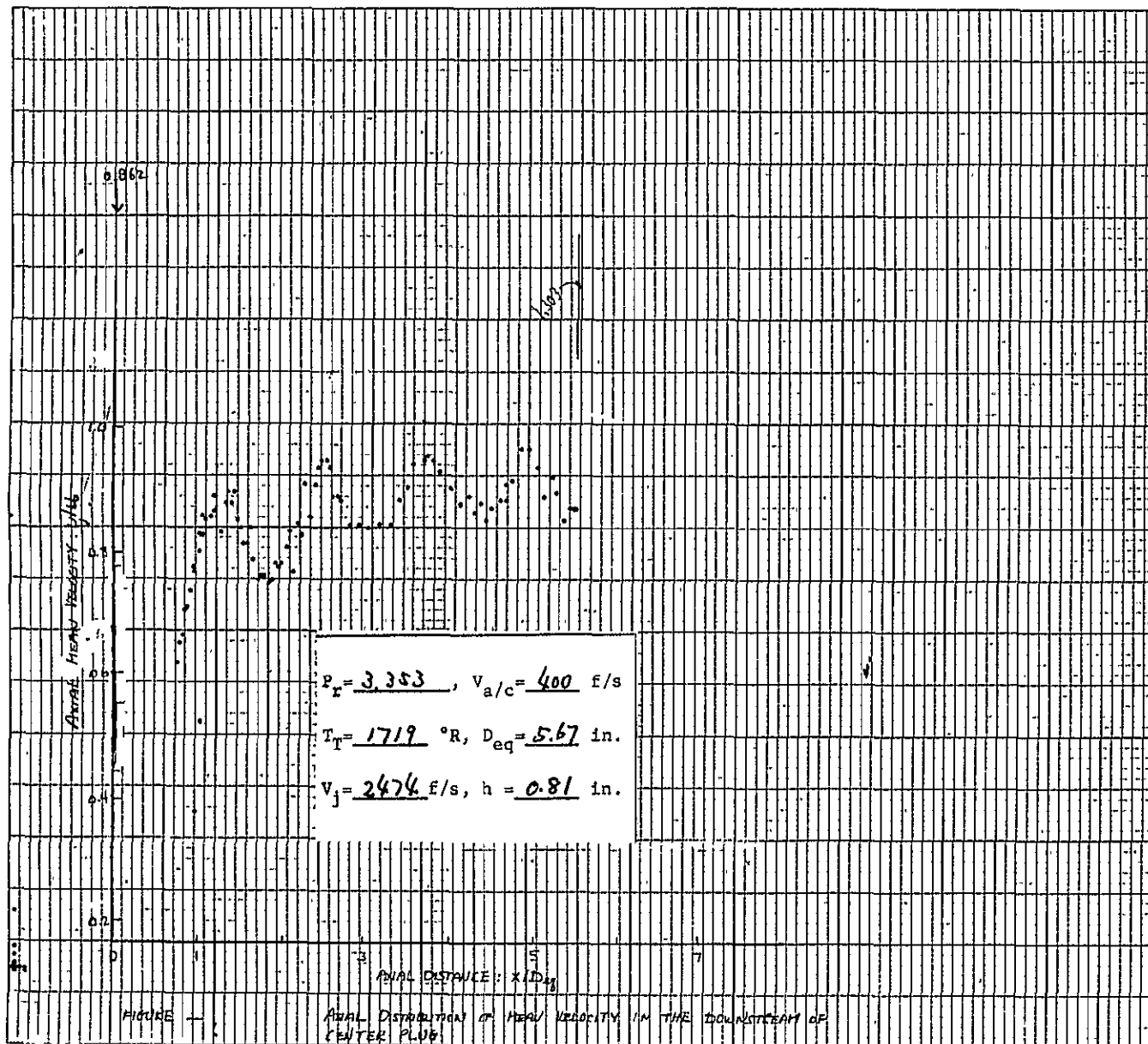
978

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DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 170	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : () - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () -	VOLTS $R_2 = 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X_D =$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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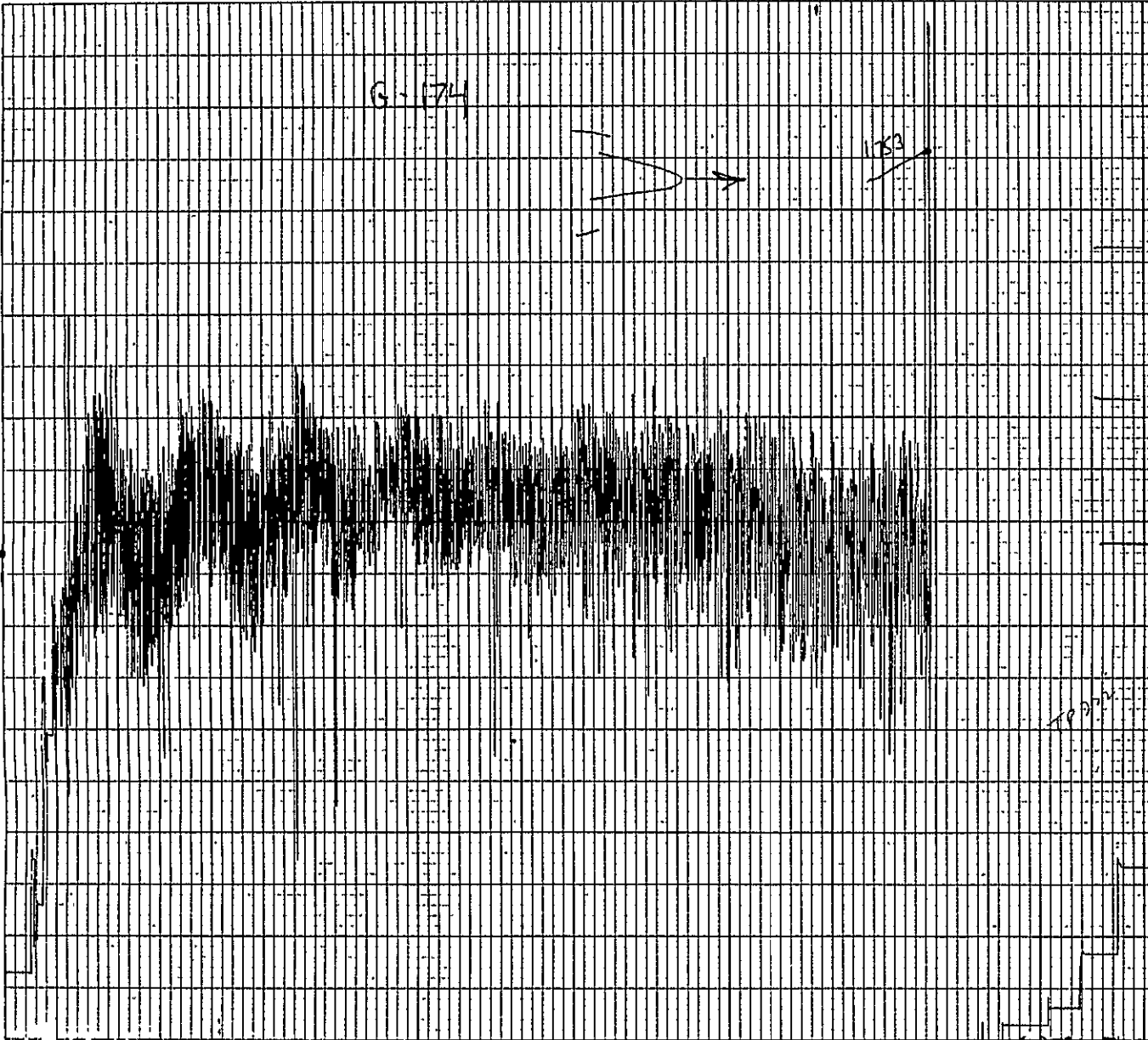


DATE: 10/16/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 171	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $R_2 = 0$	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X_{eq}	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 418 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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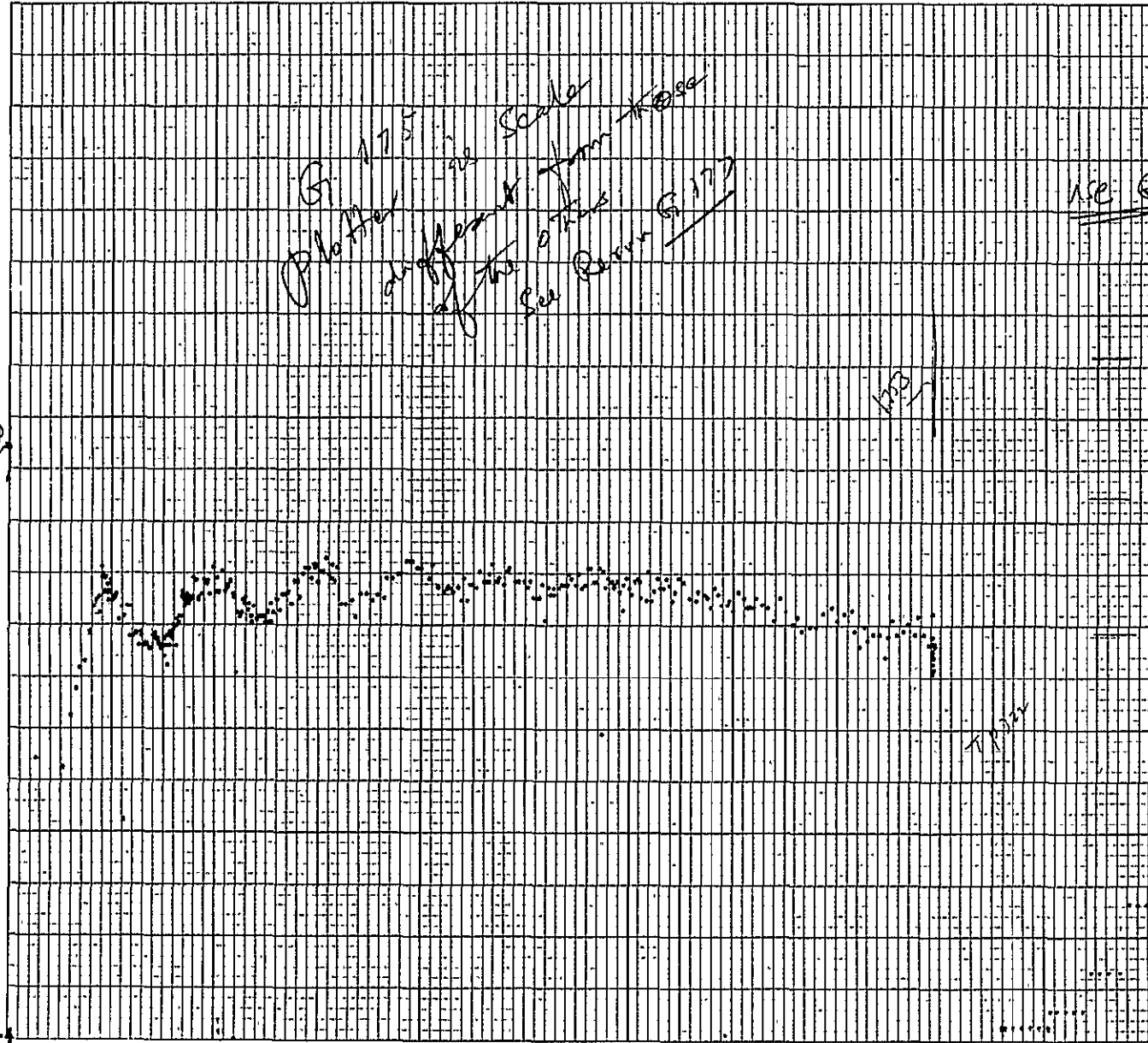


DATE: 10/20/81	NOZZLE: # 3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 174	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 0$	
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS=	INCH/UNIT
Y-AXIS=	F.P.S./UNIT
HISTOGRAMS:	H- TO H-
THIS IS REPEATED IN G-176	

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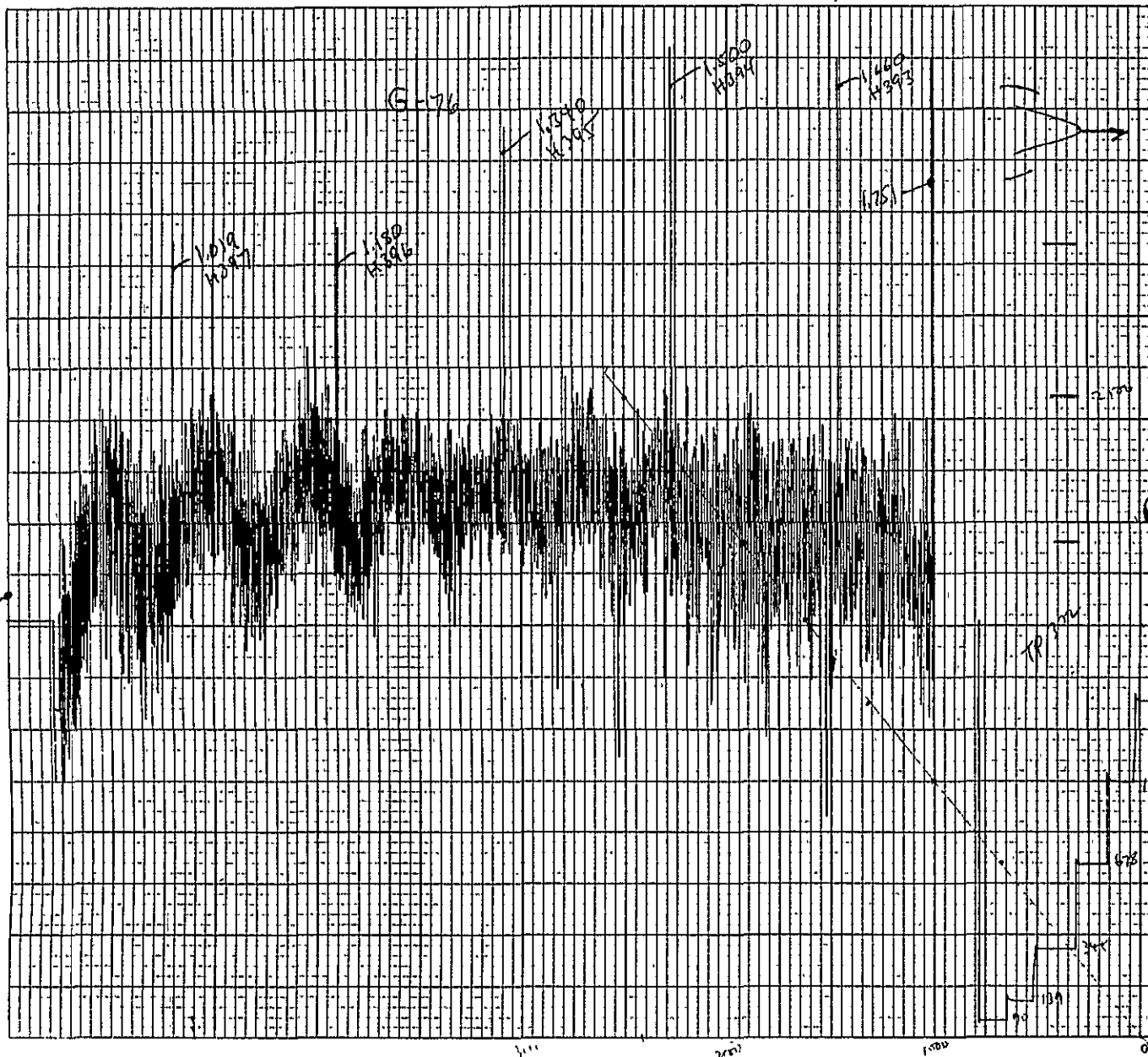
DATE: 10/20/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 175	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS) R_1	= 0
LOCATIONS TRAVERSE - VOLTS) R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS) X	= eq
LOCATIONS TRAVERSE - VOLTS) D	
SCALE : X-AXIS= INCH/UNIT	
Y-AXIS= F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
THIS IS REPEATED IN G-177	

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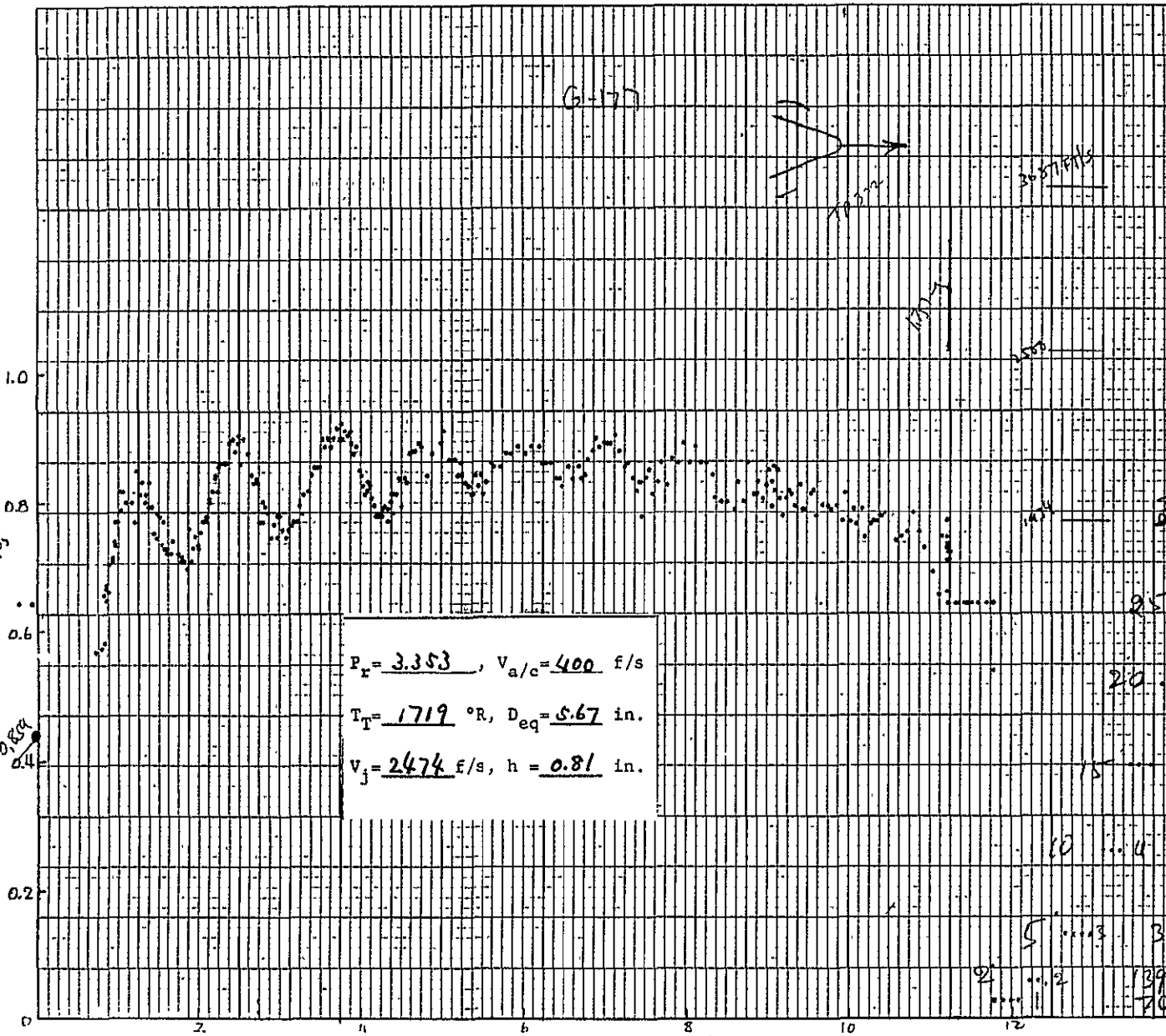


DATE: 10/20/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 322
PLOT IDENTIFICATION: G - 176	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS X_{eq}
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 309 F.P.S./UNIT	
HISTOGRAMS: H-393 TO H-397	

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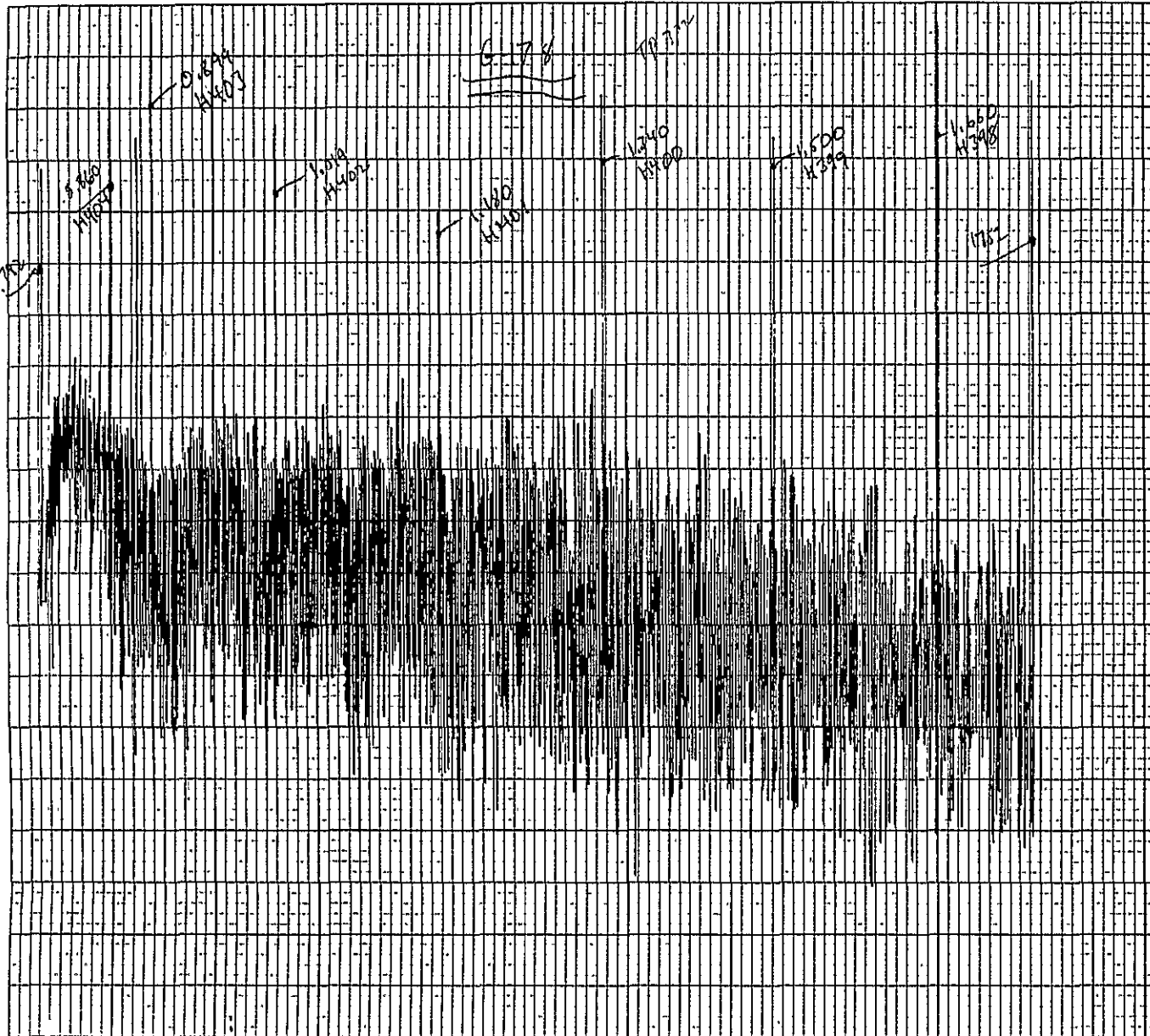
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RECORDING CHART
GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y.
AXIAL MEAN VELOCITY: 0.886



DATE: 10/20/81		NOZZLE: #3	
TEST POINT: L.V. -		ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 177			
TRAVERSE DETAILS.			
AXIAL	<input checked="" type="checkbox"/>	REF. (C) -	VOLTS $\frac{R}{R_2}$ = 0
RADIAL	<input type="checkbox"/>	REF. () -	VOLTS $\frac{X}{X_{eq}}$
LOCATIONS	TRAVERSE -	E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
SCALE: X-AXIS = 7.08 INCH/UNIT			
Y-AXIS = 389 F.P.S./UNIT			
HISTOGRAMS: H- TO H-			
LINE OF LU TRAVERSE			

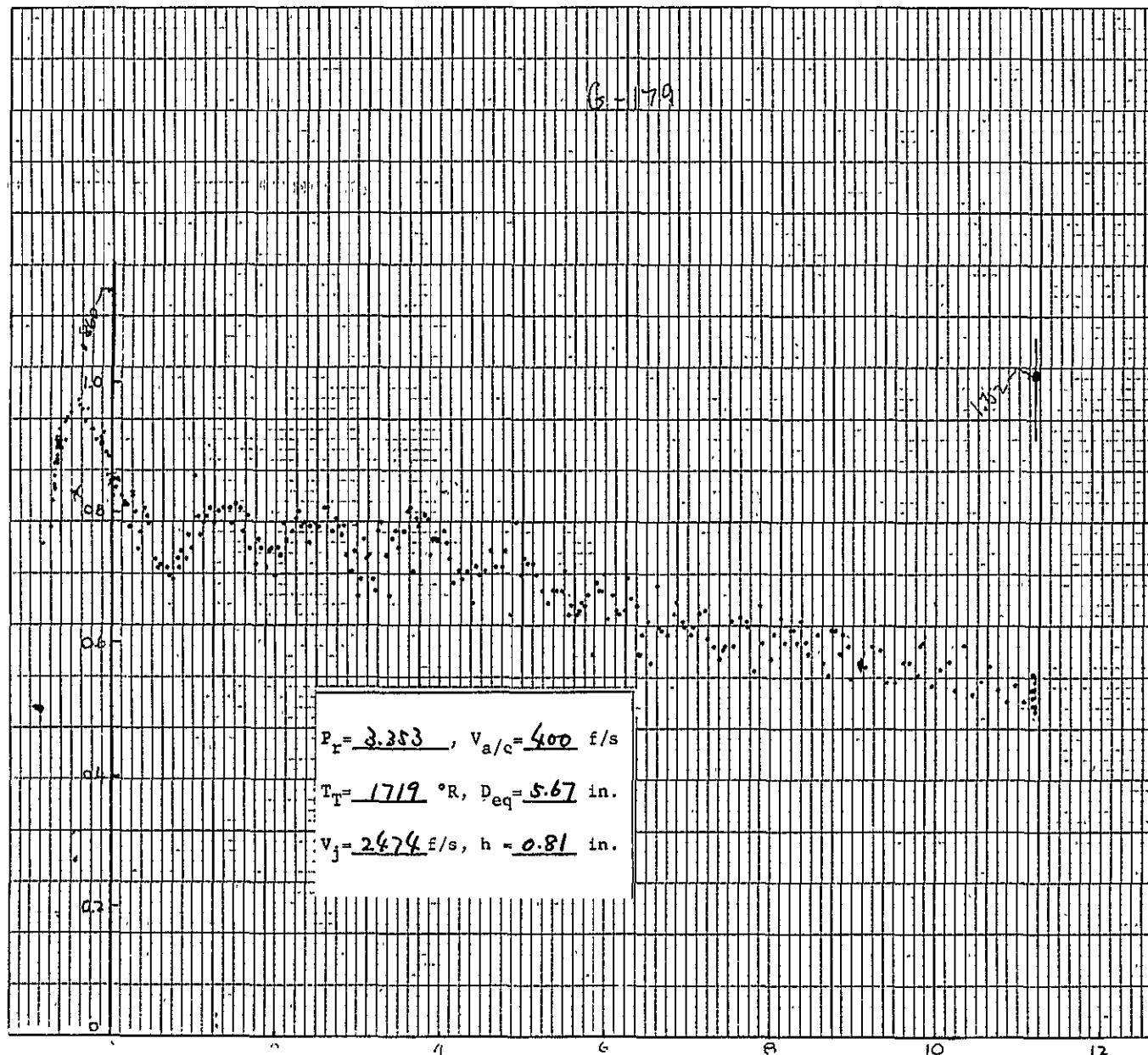
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DATE: 10/20/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 178	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_1 = 1$
LOCATIONS TRAVERSE -	VOLTS $R_2 = 1$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X =$
LOCATIONS TRAVERSE -	VOLTS $D_{eq} =$
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 889 F.P.S./UNIT	
HISTOGRAMS: H- 398 TO H- 405	

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RECORD CHART
GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y. 14203
AXIAL FLOW VELOCITY 58.6



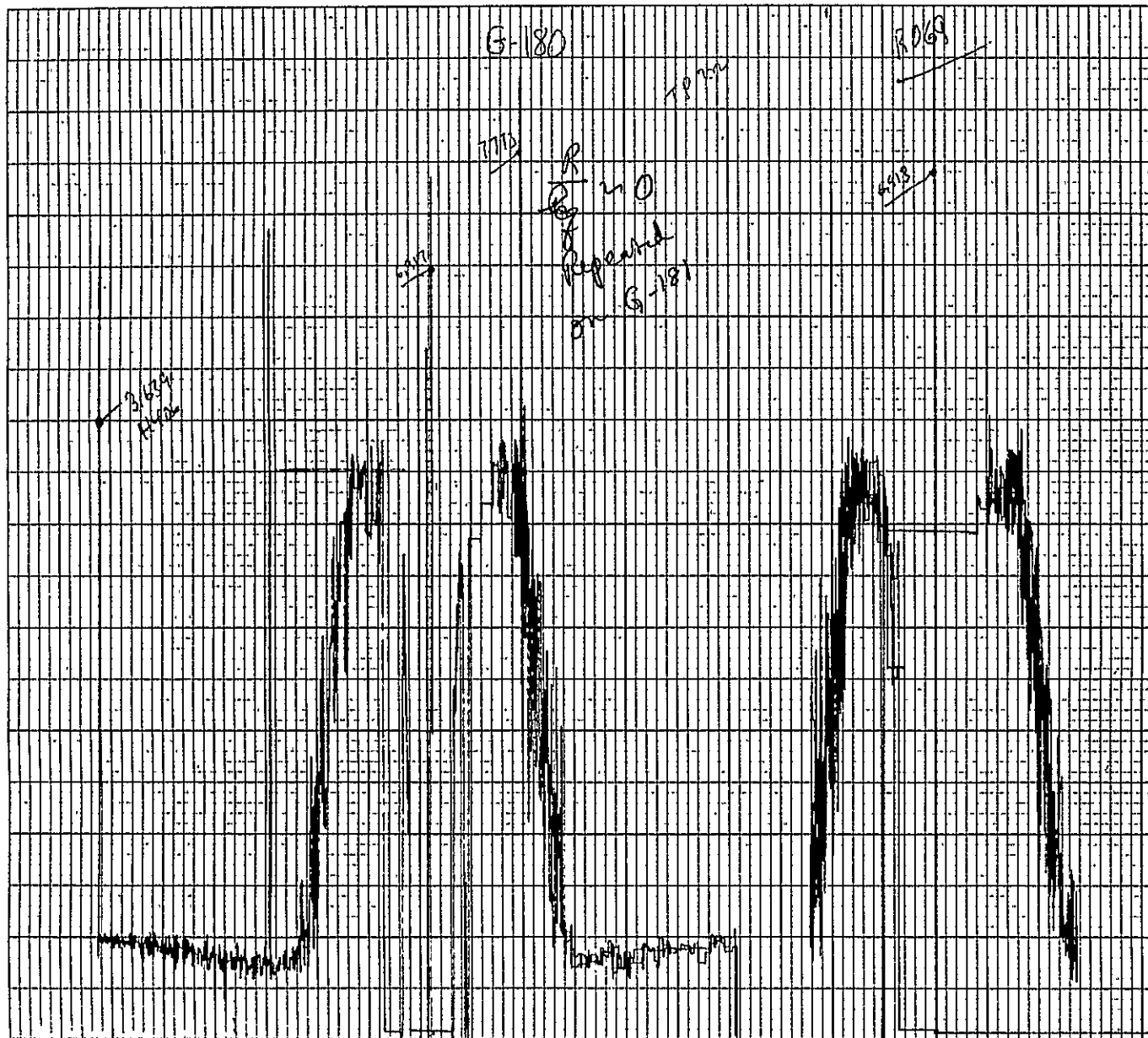
$P_r = 3.353$, $V_{a/c} = 400$ f/s

$T_T = 1719$ °R, $D_{eq} = 5.67$ in.

$V_j = 2474$ f/s, $h = 0.81$ in.

DATE: 10/20/81	NOZZLE: #3
TEST POINT: L.V. -	ACOUSTIC - 322
PLOT IDENTIFICATION: G - 179	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 1$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08	INCH/UNIT
Y-AXIS= 389	F.P.S./UNIT
HISTOGRAMS: H- TO H-	

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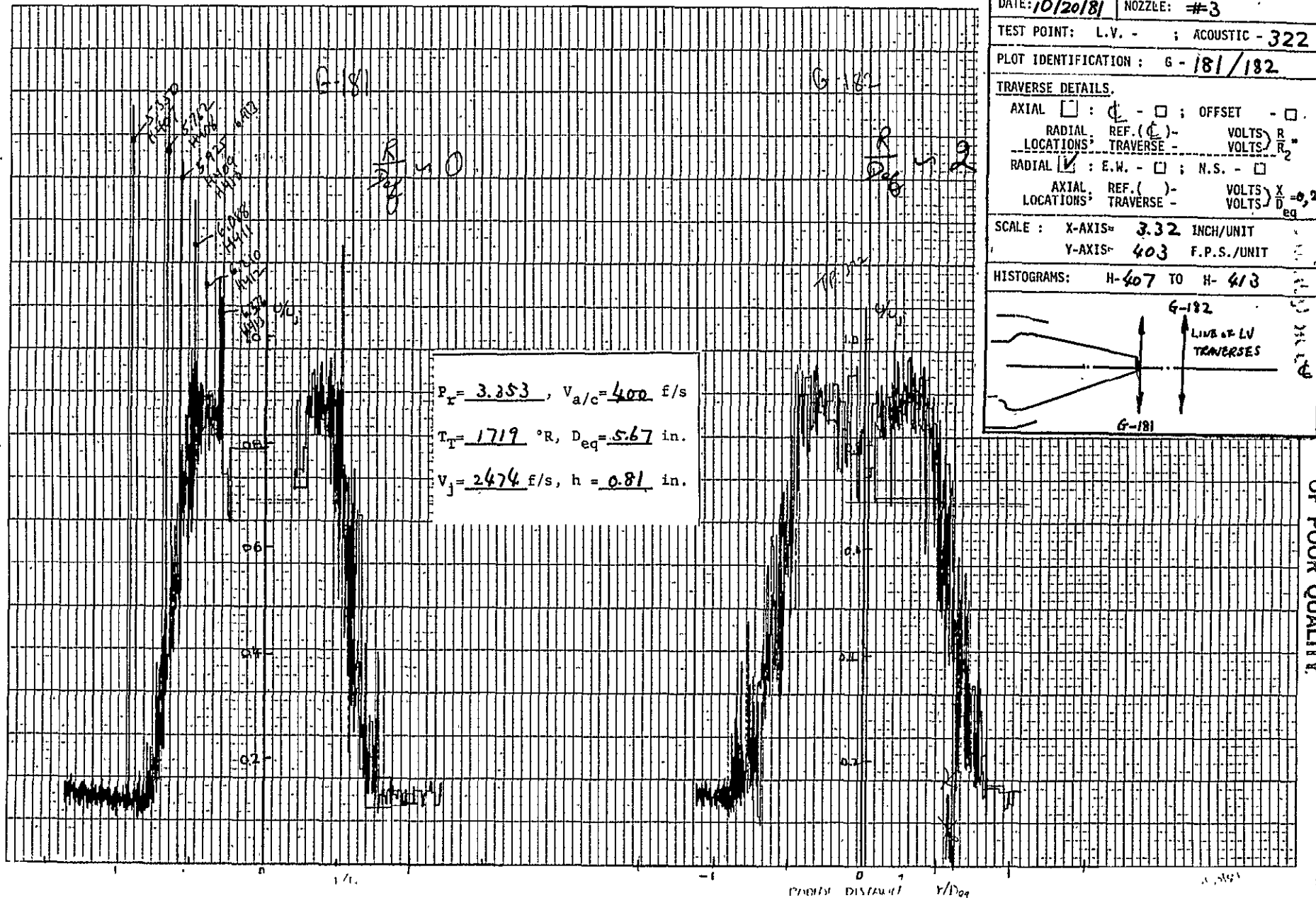
DATE: 10/20/81	NOZZLE: # 3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 180	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS=	INCH/UNIT
Y-AXIS=	F.P.S./UNIT
HISTOGRAMS:	H- TO H-

THIS IS REPEATED ON G-181

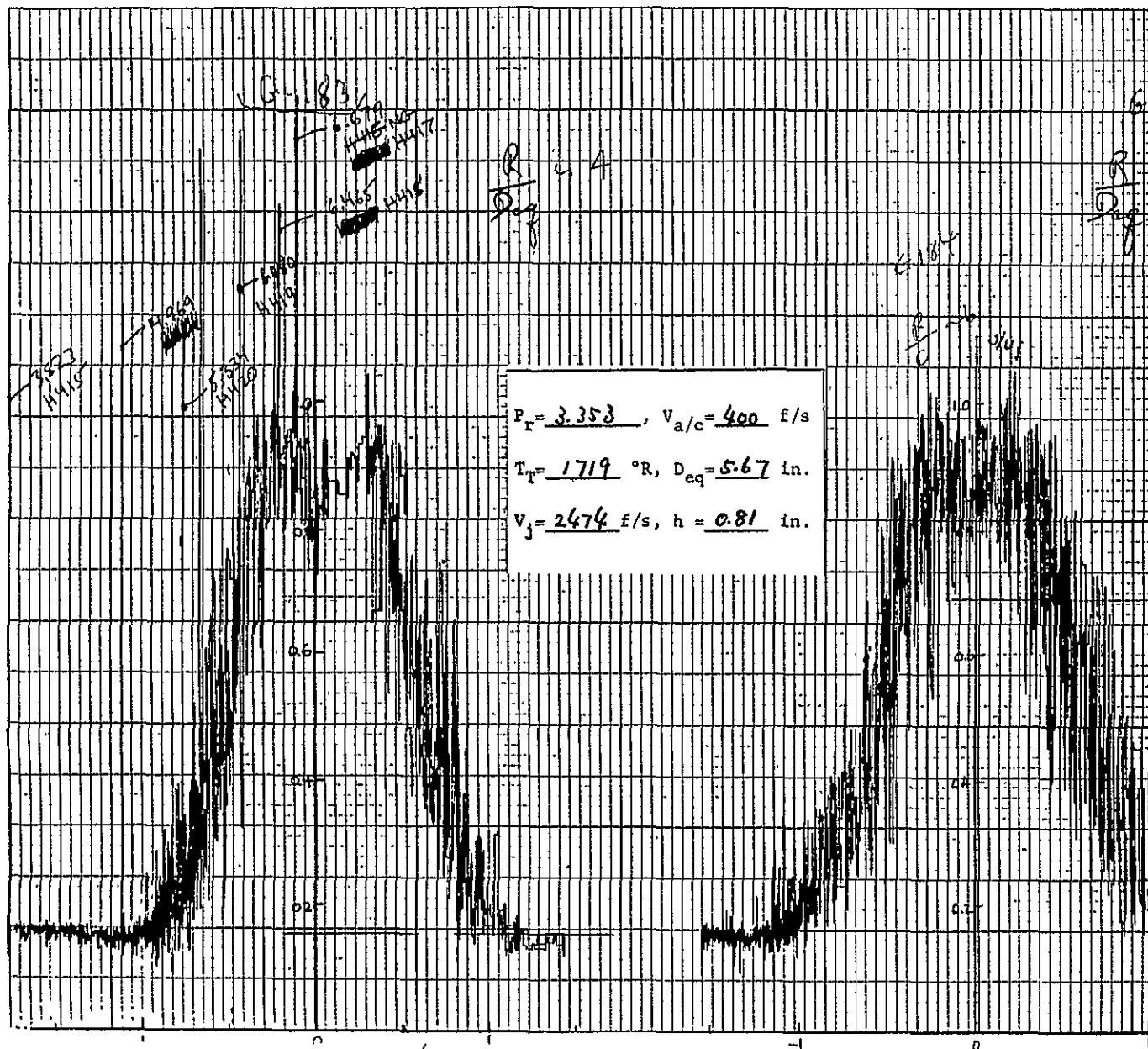
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DATE: 10/20/81 NOZZLE: #3

TEST POINT: L.V. - ; ACOUSTIC - 322

PLOT IDENTIFICATION: B - 183/184

TRAVERSE DETAILS.

AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐ .

RADIAL, REF. (C) - VOLTS) R -

LOCATIONS; TRAVERSE - VOLTS) R₂

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

AXIAL, REF. () - VOLTS) X = 4.6

LOCATIONS; TRAVERSE - VOLTS) D = 89

SCALE : X-AXIS= 3.32 INCH/UNIT

.Y-AXIS= 403 F.P.S./UNIT

HISTOGRAMS: H- TO H-

G-183

G-184

LIVE & FLV TRAVERSES

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686

DATE: 10/20/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 185	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 403 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$$P_T = 3.353, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 1719^\circ R, D_{eq} = 5.67 \text{ in.}$$

$$V_j = 2474 \text{ f/s, } h = 0.81 \text{ in.}$$

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990

$P_r = 3.853$, $V_{a/c} = 400$ f/s
 $T_r = 1719$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2474$ f/s, $h = 0.81$ in.

DATE: 10/20/81	NOZZLE: #3
TEST POINT: L.V. - ; ACOUSTIC - 322	
PLOT IDENTIFICATION: G - 186	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 403 F.P.S./UNIT	
HISTOGRAMS: H-422 TO H-428	

No XY 1101

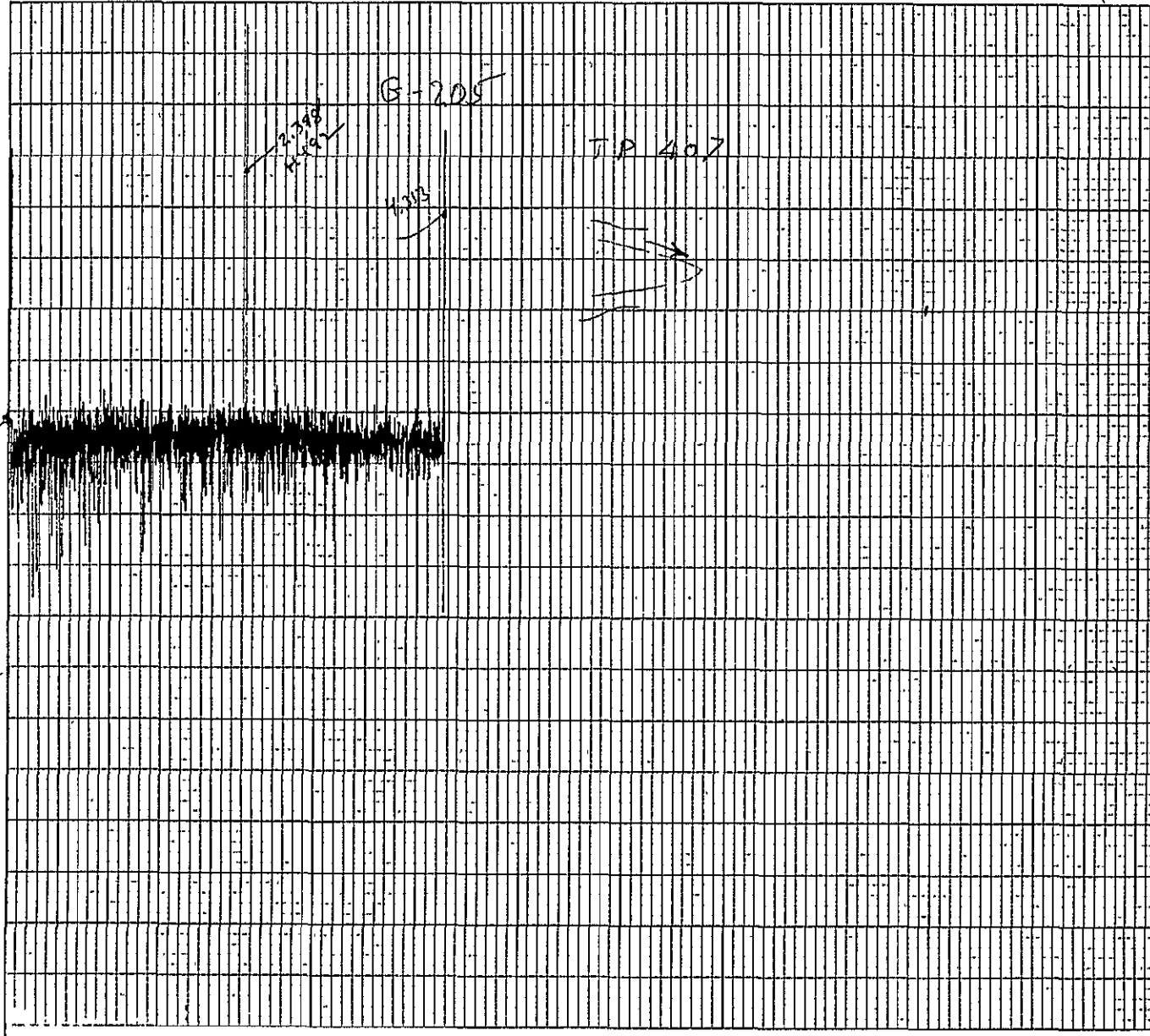
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Model 4
Test Point 407

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993



DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 407
PLOT IDENTIFICATION: G - 205	
TRAVERSE DETAILS	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1 =
LOCATIONS TRAVERSE -	VOLTS R_2 =
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X =
LOCATIONS TRAVERSE -	VOLTS D_{eq} =
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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AXIAL MEAN VELOCITY. PERCENT OF U.S.A.
934-080-3

$$v_f = \underline{2392} \text{ f/s}, h = \underline{0.81} \text{ in.}$$

TP-467

DATE: 10/22/81 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 407

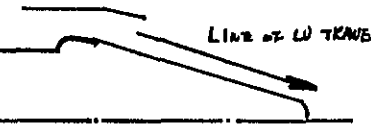
PLOT IDENTIFICATION: G - 206

TRAVERSE DETAILS.

AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐
RADIAL REF. (☒) - VOLTS R_1 =
LOCATIONS, TRAVERSE - VOLTS R_2 =
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X =
LOCATIONS, TRAVERSE - VOLTS D =
eq

SCALE : X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 413 F.P.S./UNIT

HISTOGRAMS: H- TO H-

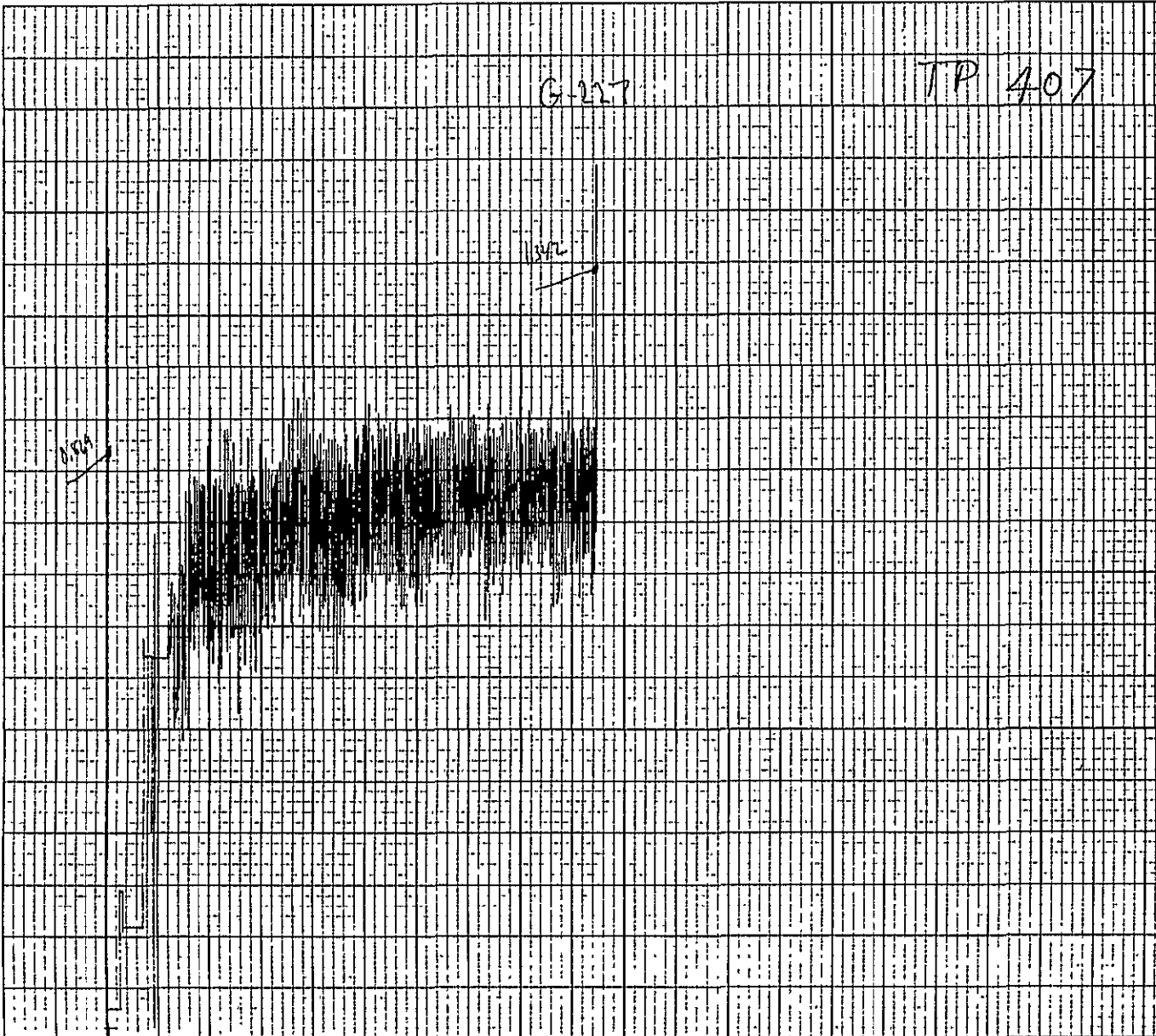


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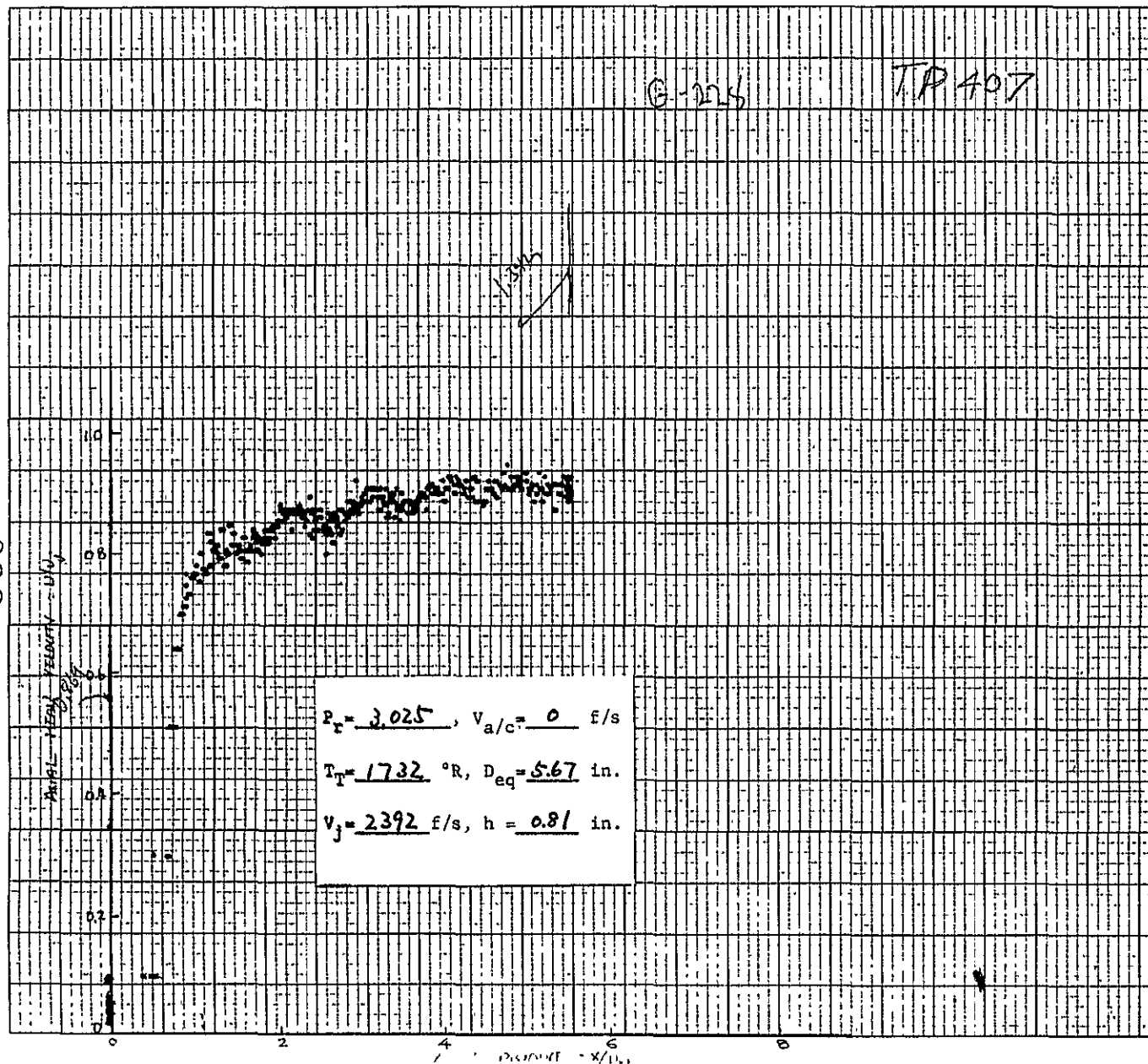
-995



DATE: 10/26/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 407	
PLOT IDENTIFICATION: G - 227	
TRAVERSE DETAILS:	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $R_1 \approx 0$	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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966

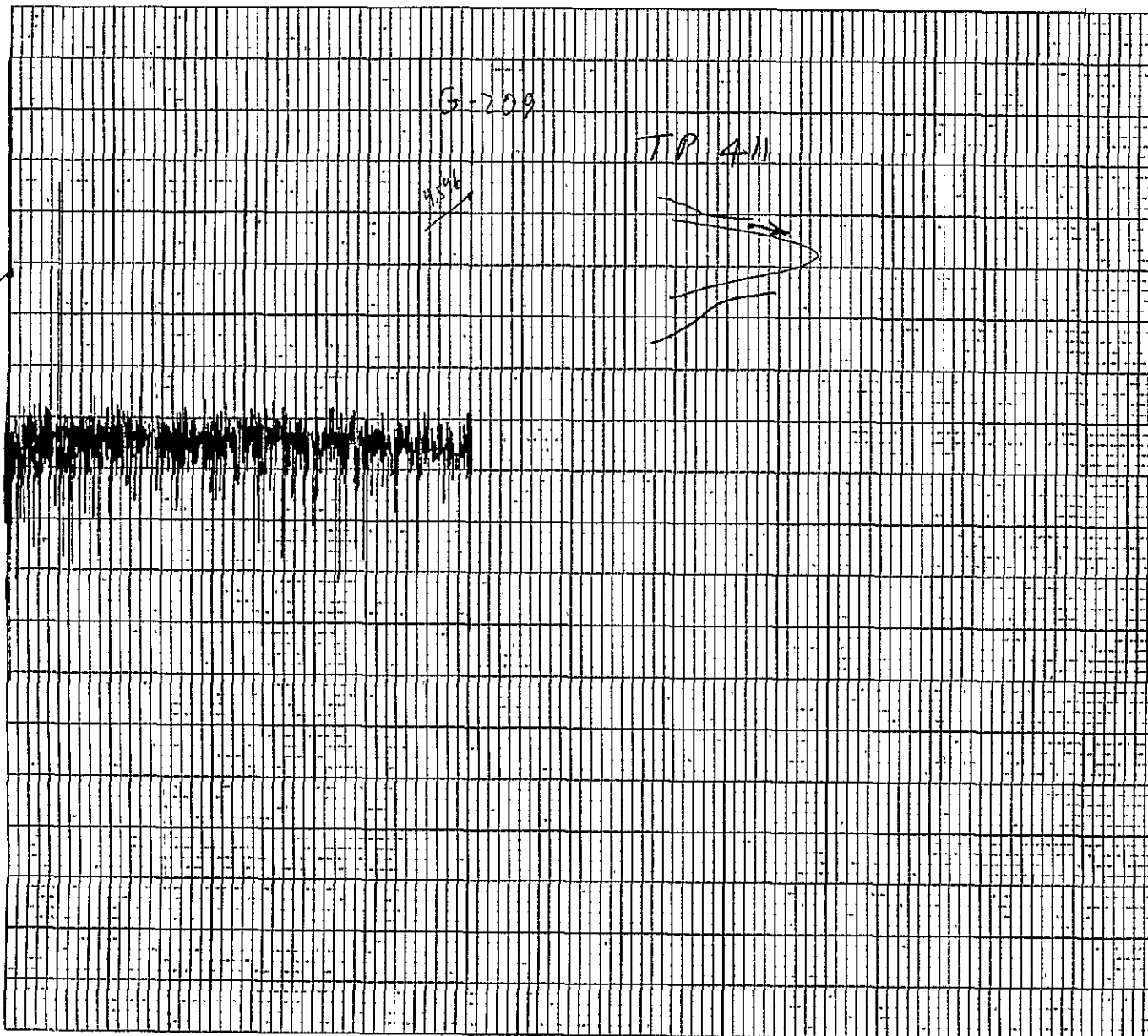


DATE: 10/26/81	NOZZLE: # 4
TEST POINT: L.V. -	ACOUSTIC - 407
PLOT IDENTIFICATION: G - 228	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.N. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X/D_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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866

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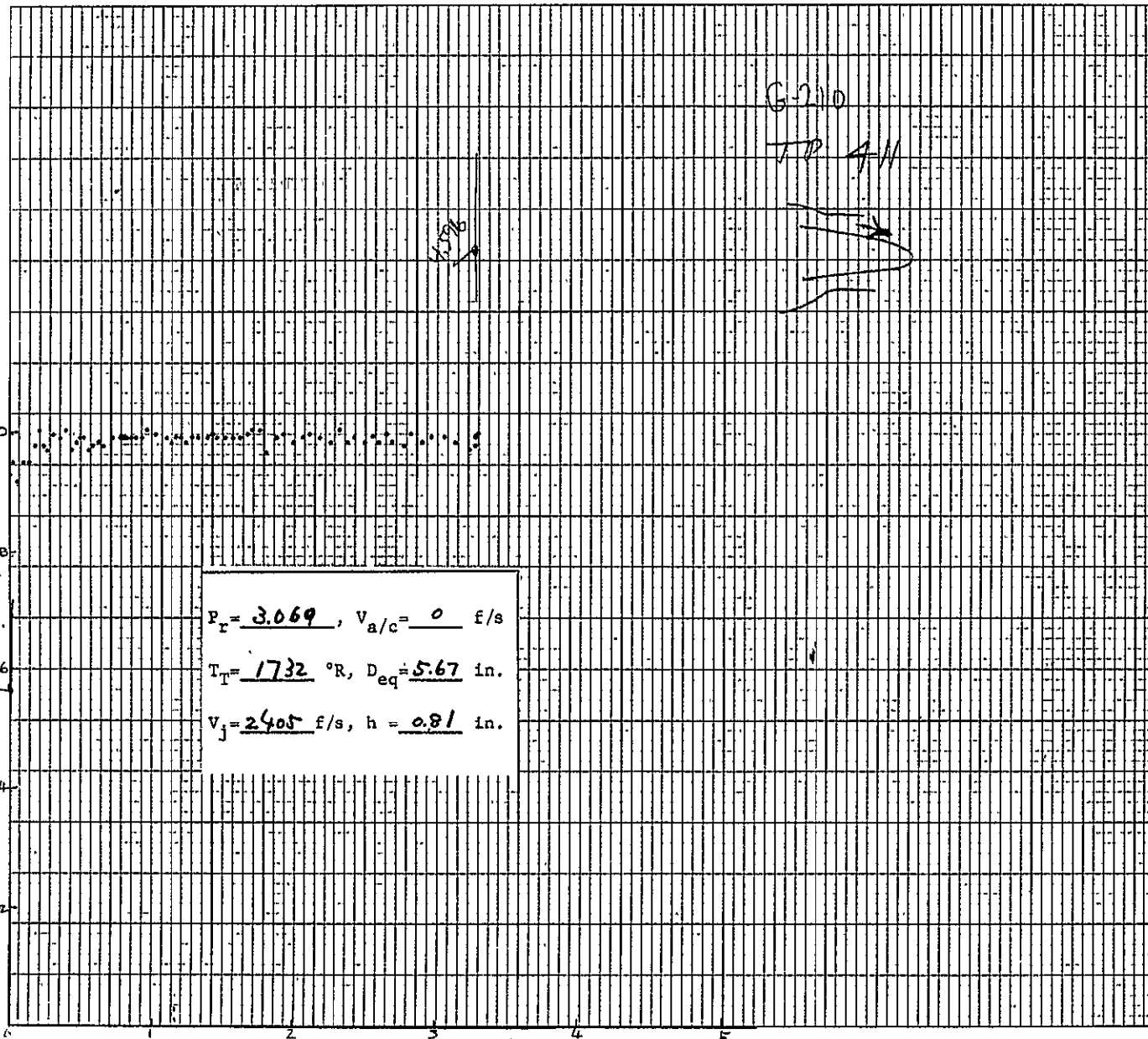


DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 411
PLOT IDENTIFICATION: G - 209	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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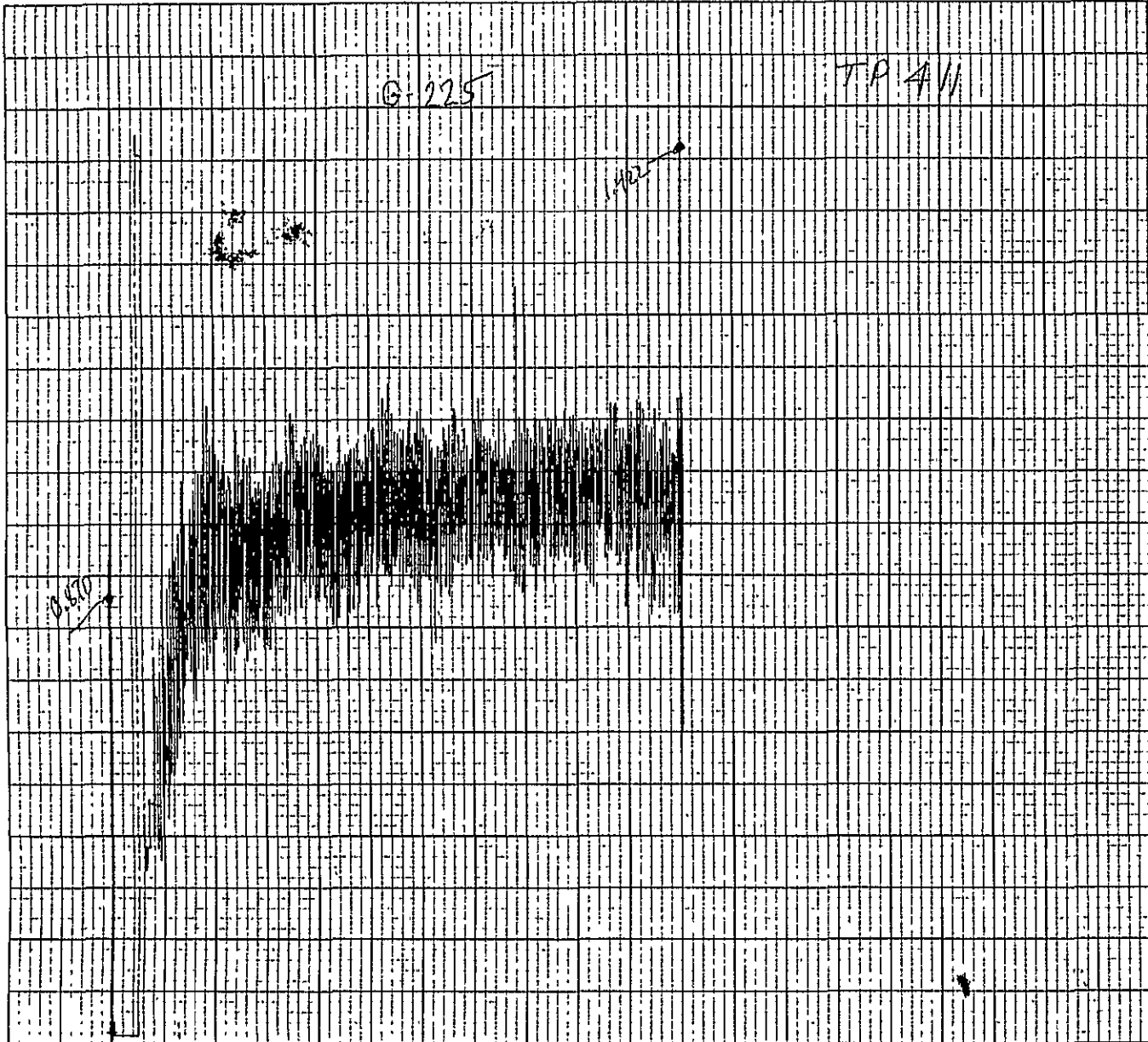
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 411
PLOT IDENTIFICATION: G - 210	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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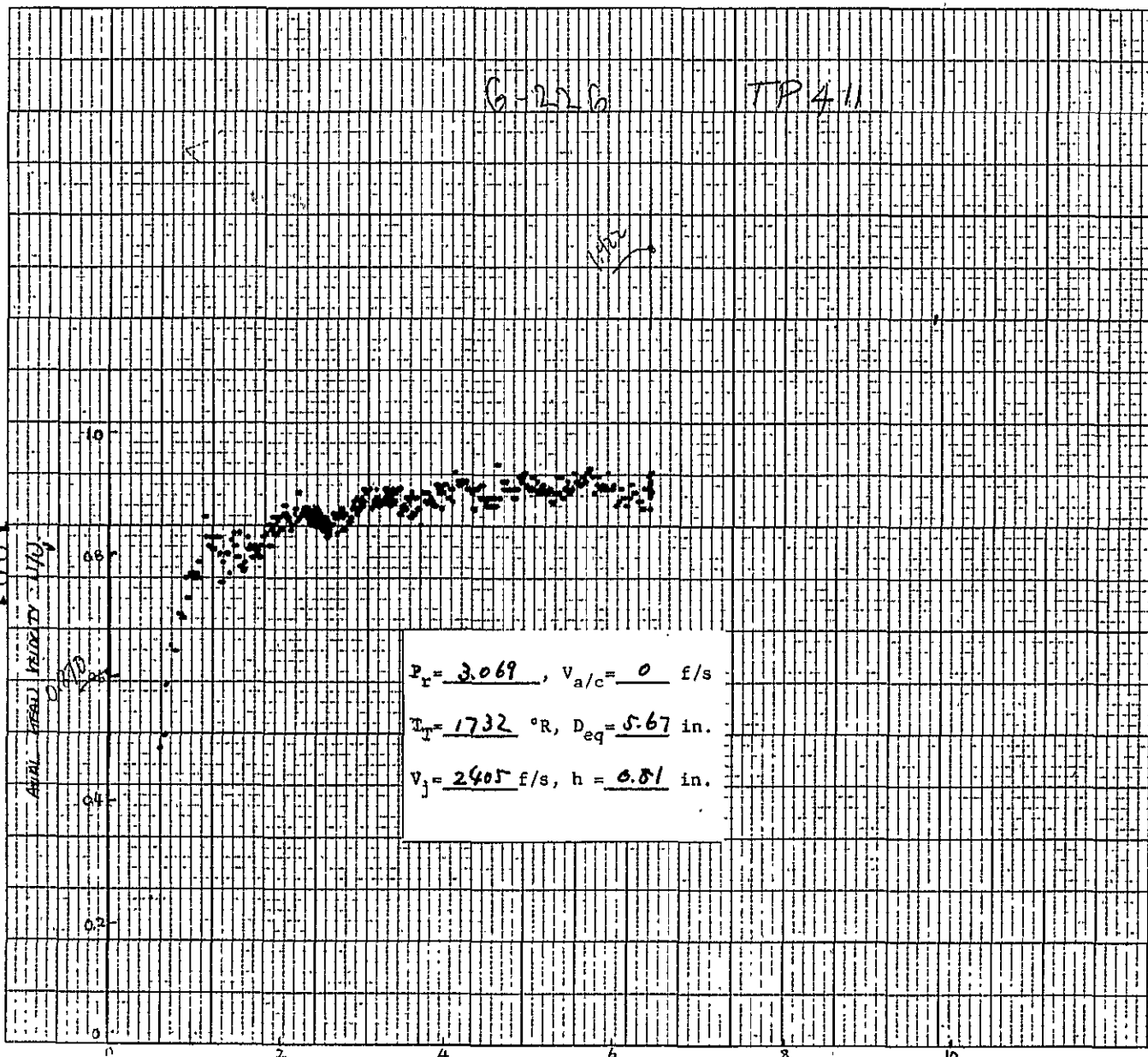
1000

NO. XY 1101



DATE: 10/26/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 411
PLOT IDENTIFICATION: G - 225	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 0$
LOCATIONS TRAVERSE -	VOLTS $R_2 = 0$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X_D =$
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 708 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

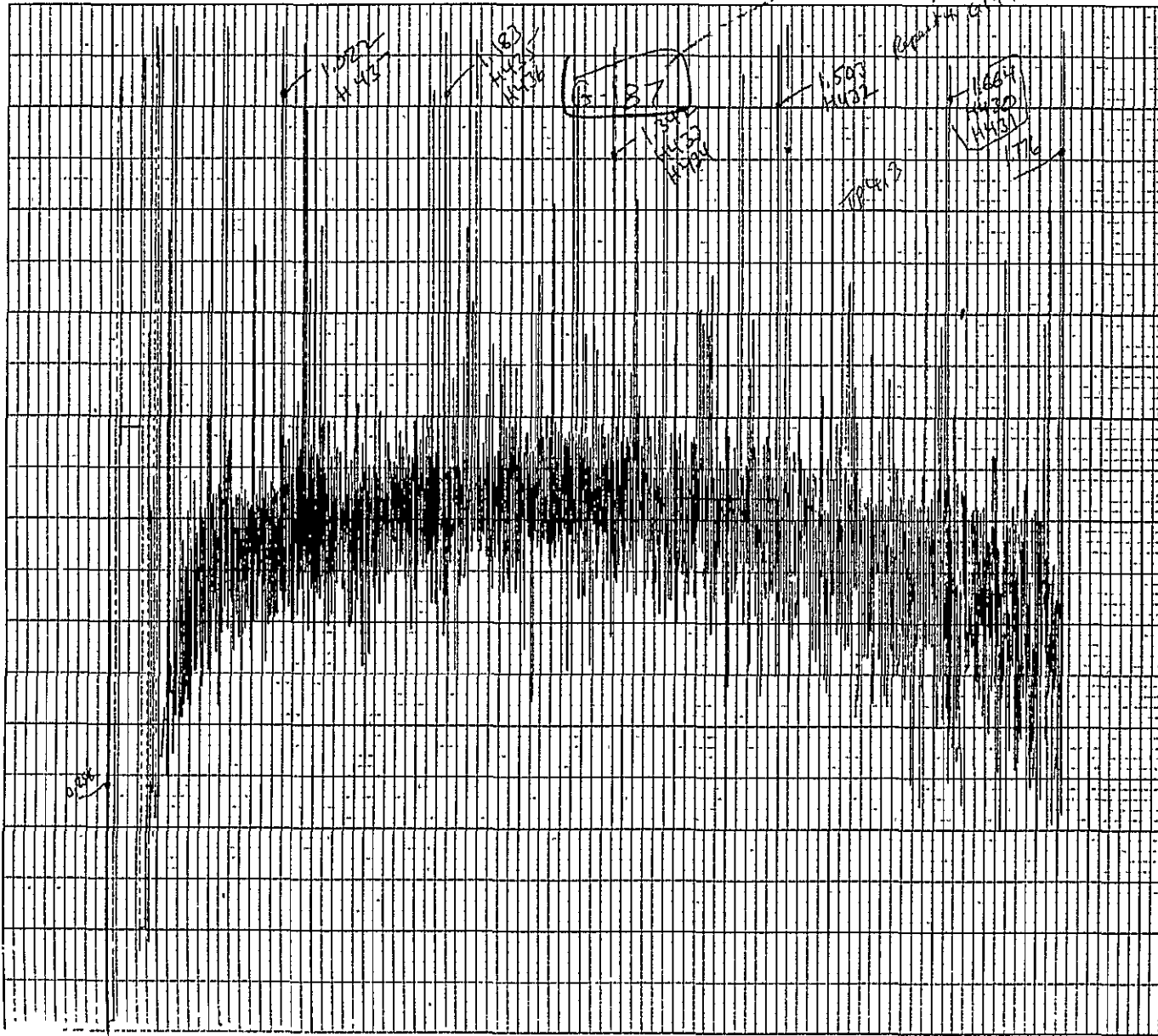
1001



$P_r = 3.069$, $V_{a/c} = 0$ f/s
 $T_r = 1732$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2405$ f/s, $h = 0.81$ in.

DATE: 10/26/81	NOZZLE: # 4
TEST POINT: L.V. -	ACOUSTIC - 411
PLOT IDENTIFICATION: G-226	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 \approx 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X_{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

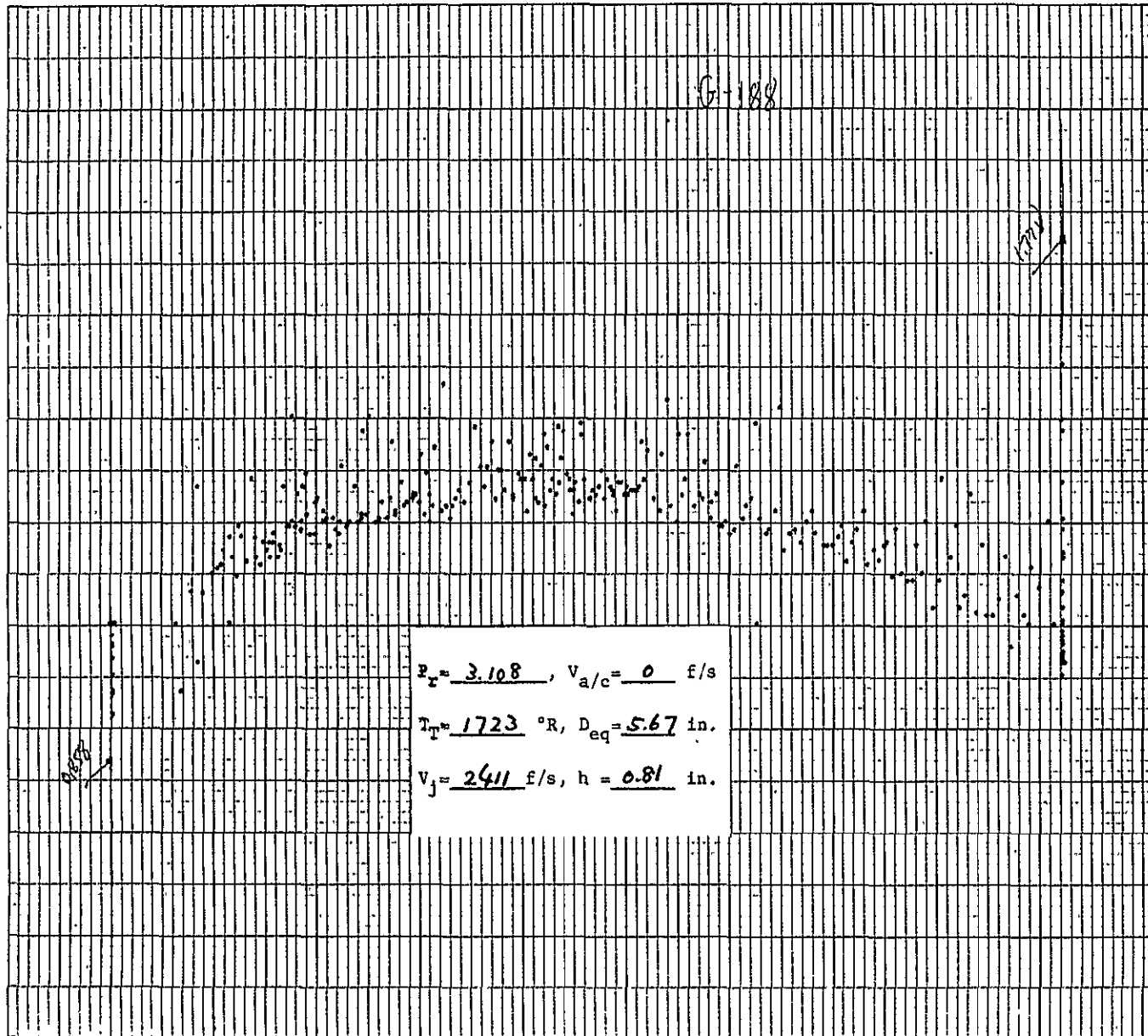
1003



DATE: 10/22/81	NOZZLE: # 4
TEST POINT: L.V. - ; ACOUSTIC - 413	
PLOT IDENTIFICATION: G - 187	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= ;	INCH/UNIT
Y-AXIS=	F.P.S./UNIT
HISTOGRAMS: H- 430 TO H- 437	
THIS IS REPEATED ON G-191	

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1004



$$P_r = 3.108, V_{a/c} = 0 \text{ f/s}$$

$$T_T = 1723 \text{ } ^\circ\text{R}, D_{eq} = 5.67 \text{ in.}$$

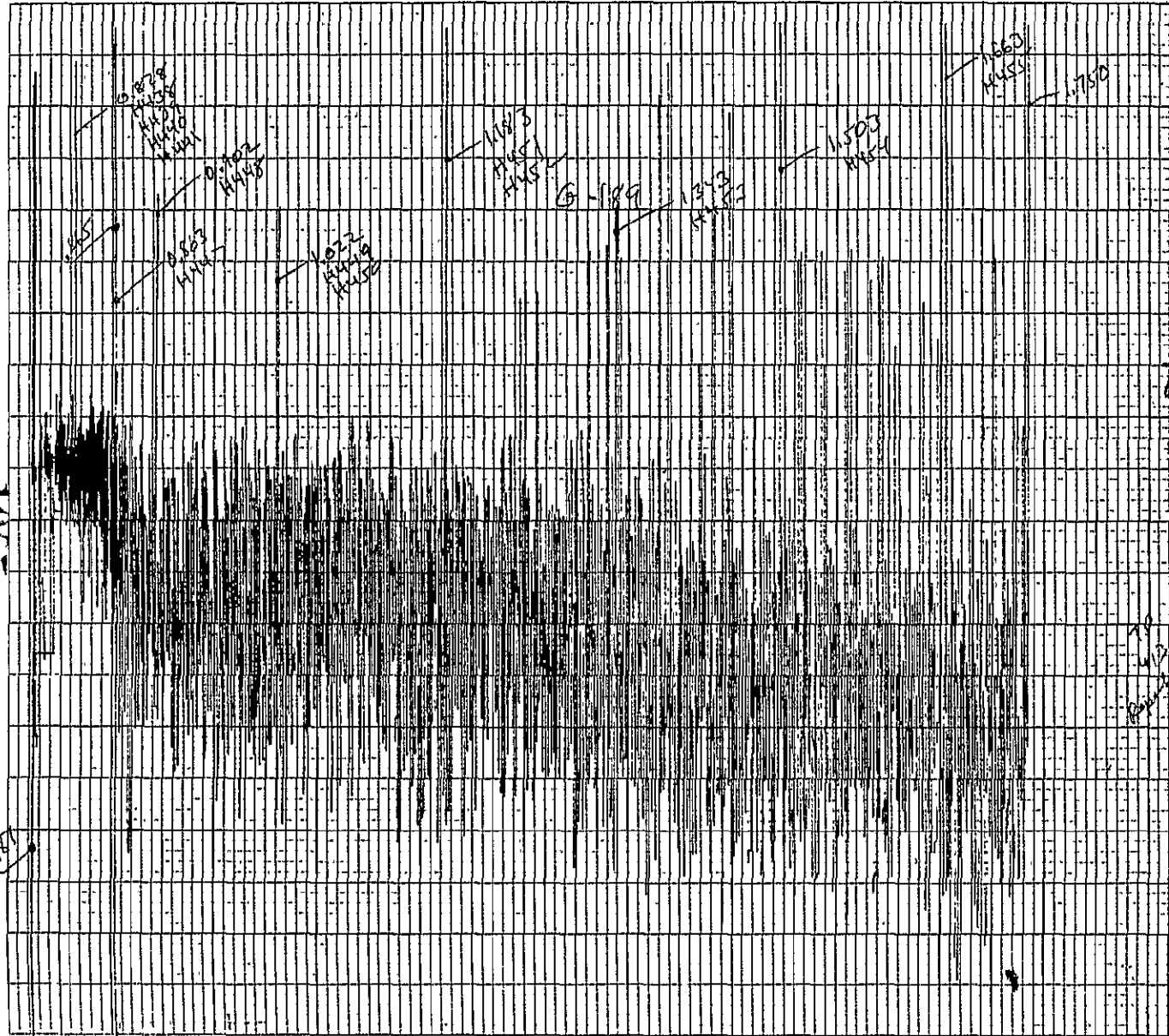
$$V_j = 2411 \text{ f/s}, h = 0.81 \text{ in.}$$

DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 4/3	
PLOT IDENTIFICATION: G - 188	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS=	INCH/UNIT
Y-AXIS=	F.P.S./UNIT
HISTOGRAMS: H-	TO H-
THIS IS REPEATED ON G-192	

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1005

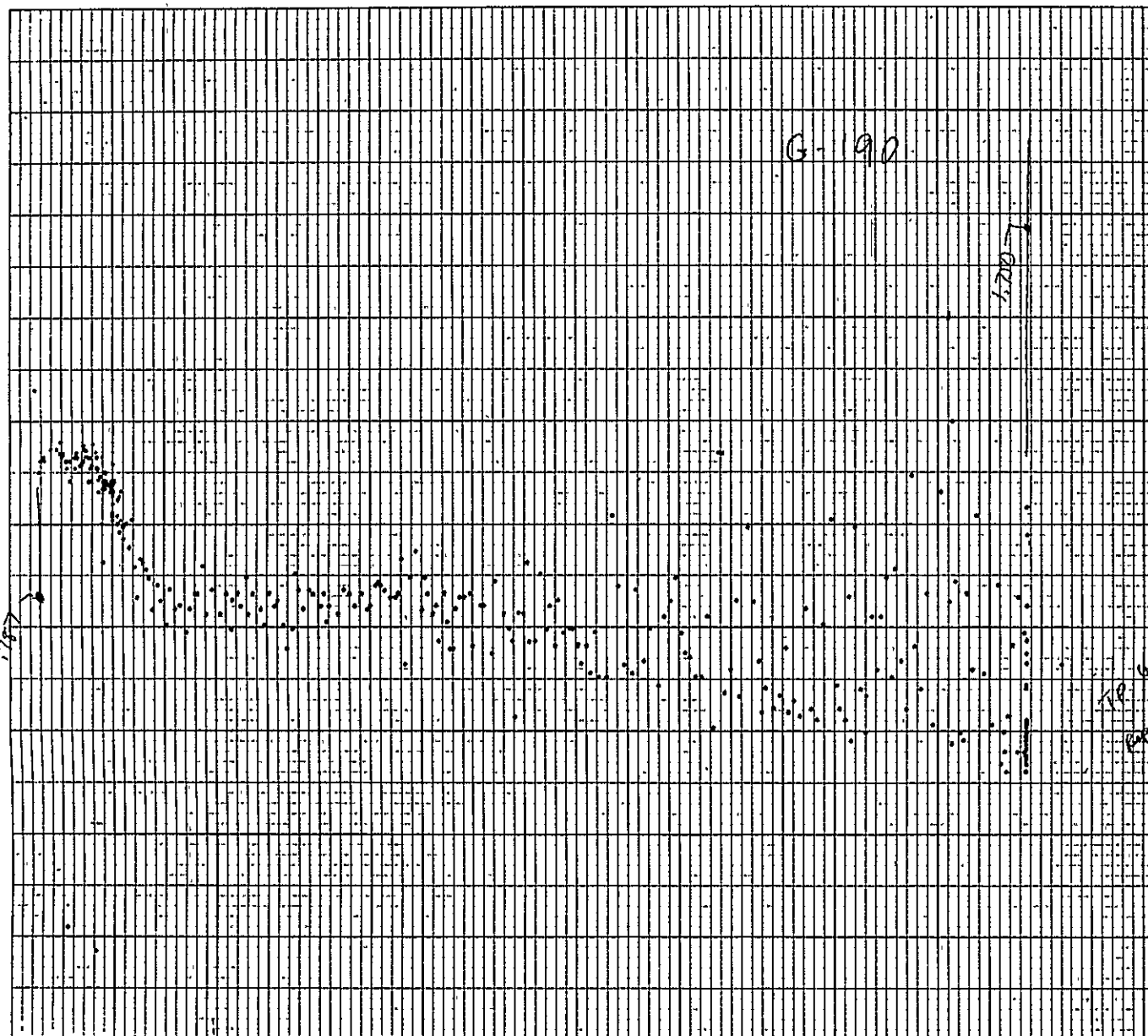
1005



DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - : ACOUSTIC - 413	
PLOT IDENTIFICATION: G - 189	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/> .	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS=	INCH/UNIT
Y-AXIS=	F.P.S./UNIT
HISTOGRAMS: H-	TO H-
THIS IS REPEATED ON G-193	

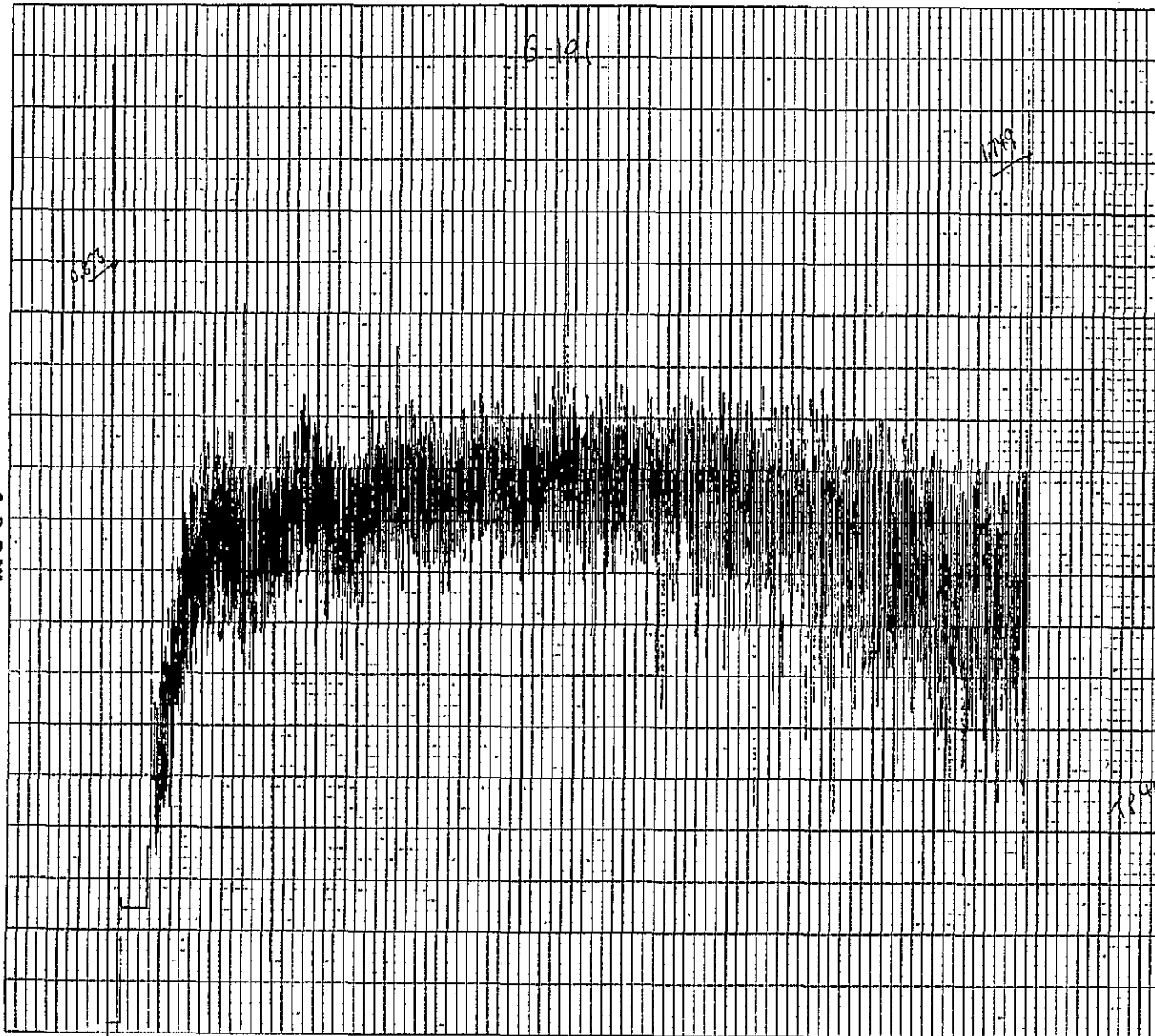
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1006



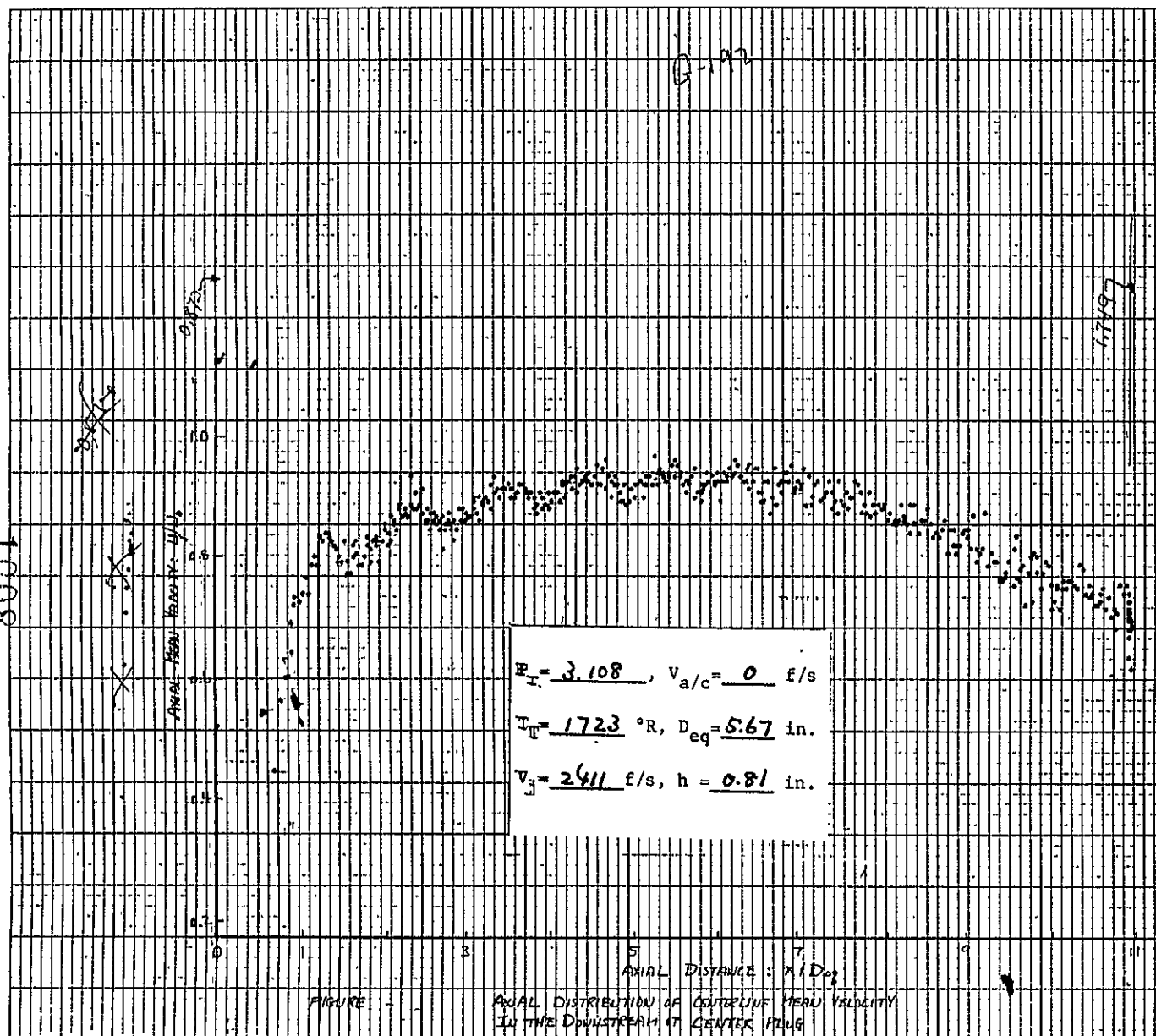
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 413	
PLOT IDENTIFICATION: G - 190	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS=	INCH/UNIT
Y-AXIS=	F.P.S./UNIT
HISTOGRAMS: H-	TO H-
THIS IS REPEATED ON G-194	

1007



DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 191	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} \times 0$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2} \times 0$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D} \times$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D} \times$
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1000



$$W_{T_1} = 3.108, v_{a/c} = 0 \text{ E/s}$$

$$T_{T_1} = 1723^\circ \text{R}, D_{eq} = 5.67 \text{ in.}$$

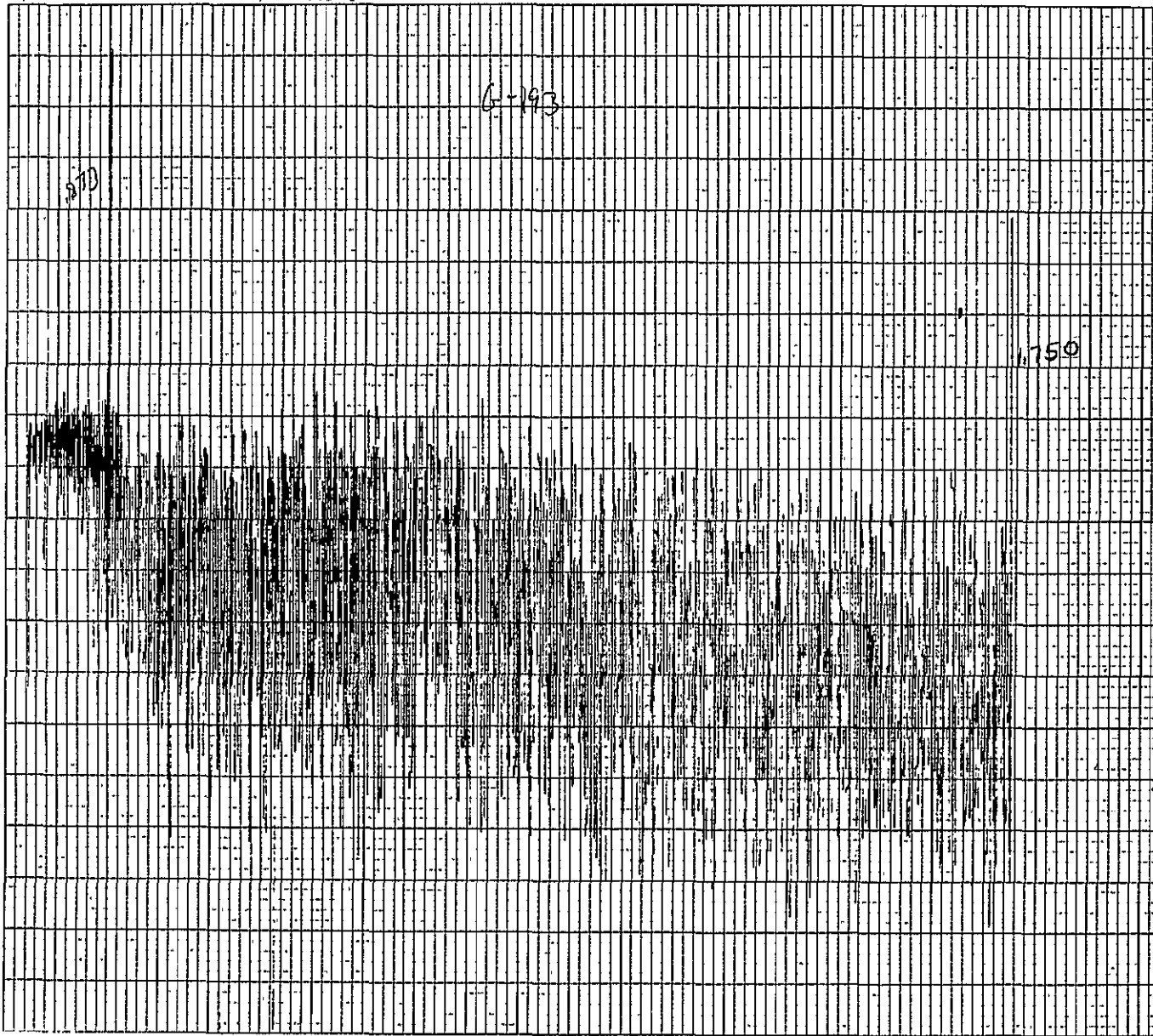
$$v_{T_1} = 2411 \text{ f/s}, h = 0.81 \text{ in.}$$

FIGURE

AXIAL DISTRIBUTION OF CENTRIFUGE MEAN VELOCITY
IN THE DOWNSTREAM AT CENTER PLUG

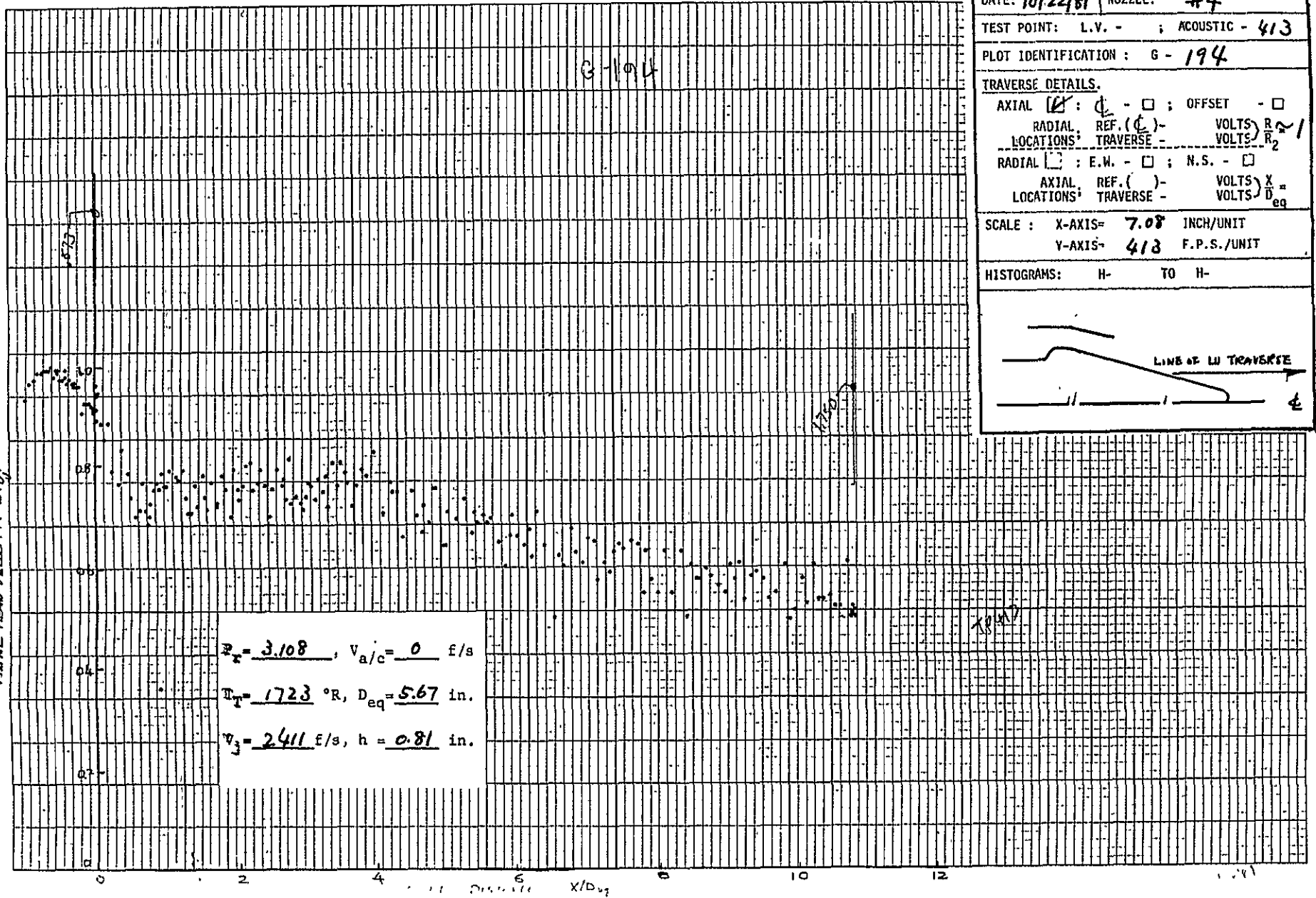
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 413	
PLOT IDENTIFICATION: G - 192	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 0$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_0}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_0}$
SCALE: X-AXIS = 7.08 INCH/UNIT	
Y-AXIS = 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 10/22/82	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 193	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 7.08	INCH/UNIT
Y-AXIS= 413	F.P.S./UNIT
HISTOGRAMS: H-	TO H-

AXIAL MEAN VELOCITY: 1010



DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 413	
PLOT IDENTIFICATION: G - 194	
TRAVERSE DETAILS:	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

T.P. 413 RADIAL DISTR. OF MEAN VELOCITY ⑥

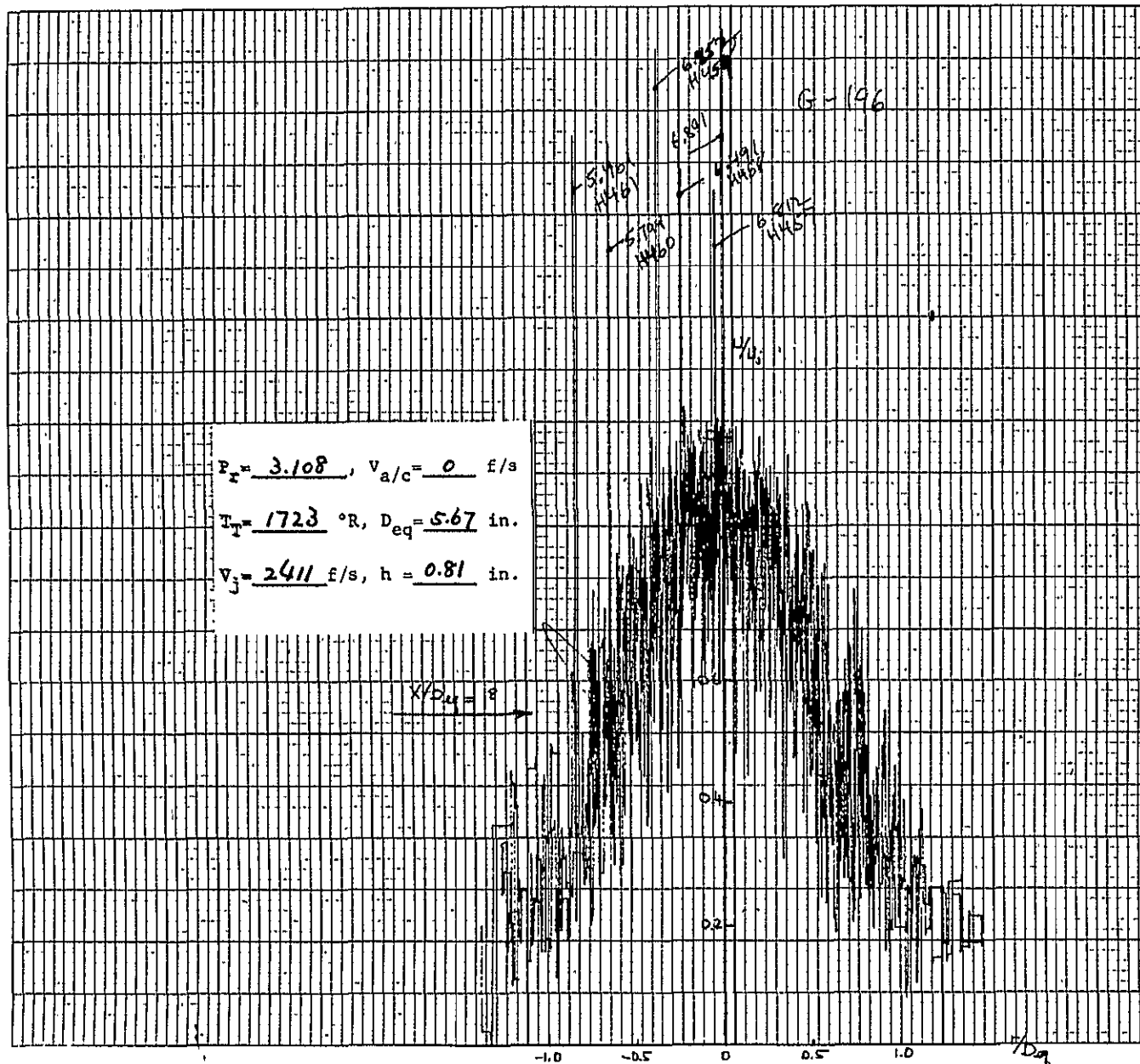
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 413	
PLOT IDENTIFICATION: G - 195	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X_{eq}	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$P_r = 3.108$, $V_{a/c} = 0$ f/s
 $T_r = 1723$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2411$ f/s, $h = 0.81$ in.

$X/D_{eq} = 0$

-1.0 -0.5 0 0.5 1.0 X/D_{eq}

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DATE: 10/22/81 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 413

PLOT IDENTIFICATION : G - 196

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐


AXIAL REF. () - VOLTS X_{eq}

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 413 F.P.S./UNIT

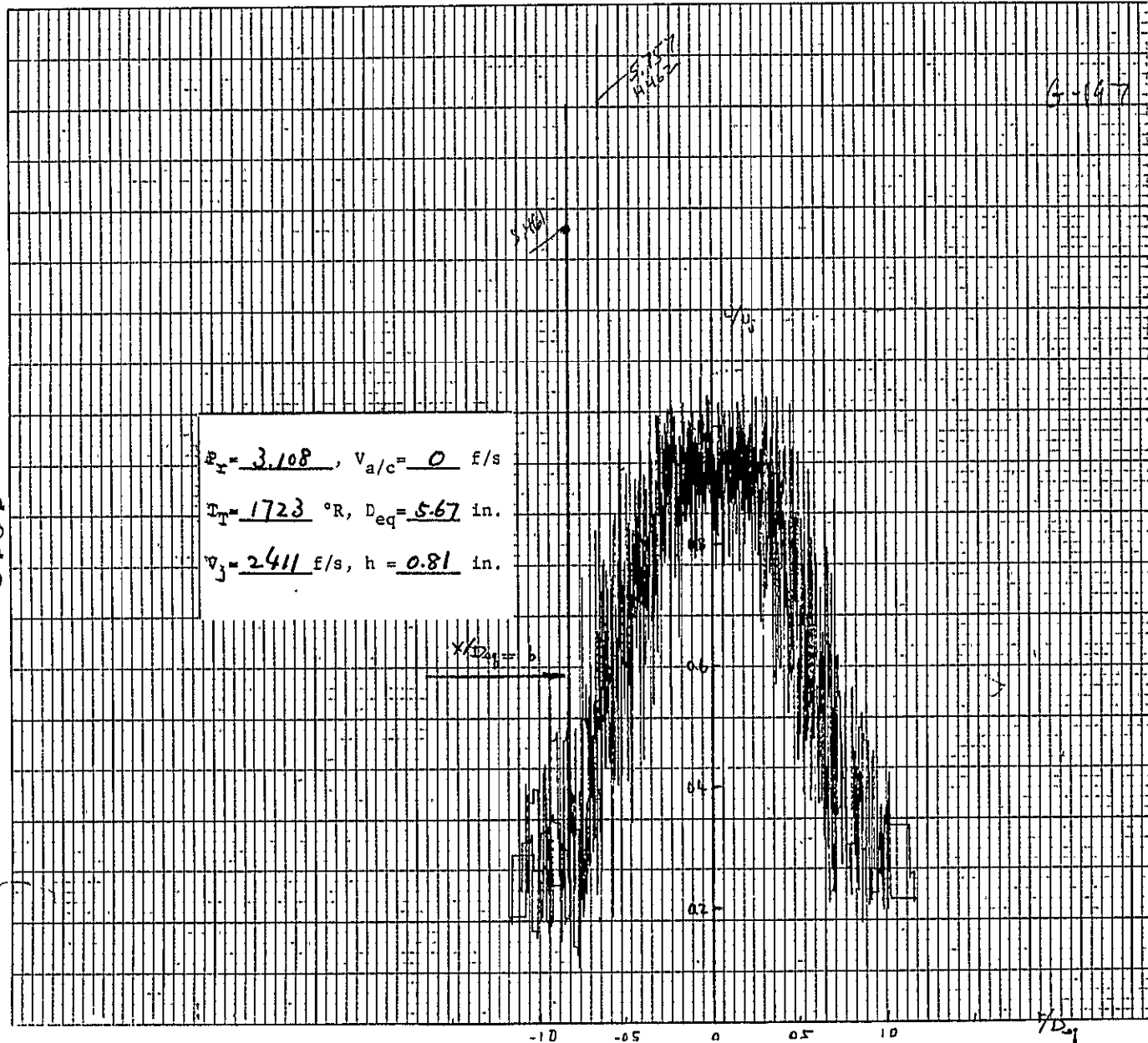
HISTOGRAMS: H- 457 TO H- 461



LINE OF LI TRAVERSE

T.P. 413 RADIAL DISTR. OF MEAN VELOCITY (4)

DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 197	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LV TRAVERSE</p>	



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T.P. 413 RADIAL DISTR. OF MEAN VELOCITY ③

DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 198	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X \approx 4$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H-463 TO H-467	

$P_r = 3.108$, $V_{a/c} = 0$ f/s
 $T_T = 1723$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2411$ f/s, $h = 0.81$ in.

$X/D_j = 4$

-1.0 -0.5 0 0.5 1.0 Y/D_{eq}

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1014

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T.P. 413 RADIAL DISTR. OF MEAN VELOCITY ②

DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 199	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF W TRAVERSE</p>	

$P_r = 3.108$, $v_{a/c} = 0$ f/s
 $T_r = 1723$ °R, $D_{eq} = 5.67$ in.
 $v_j = 2411$ f/s, $h = 0.81$ in.

$X/D_j = 1$

-1.0 -0.5 0 0.5 1.0

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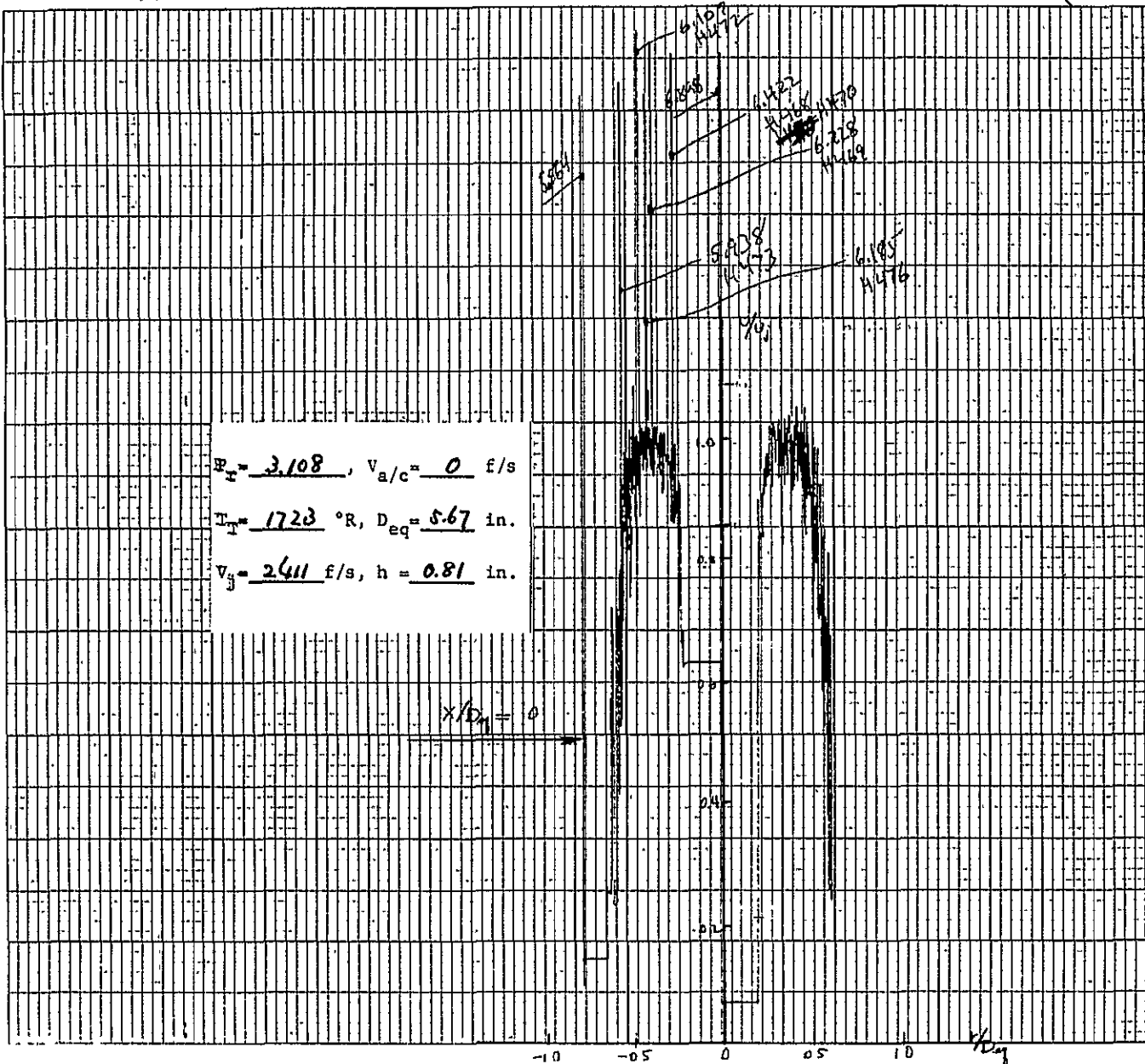
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T.P. 413 RADIAL DISTR. OF MEAN VELOCITY ①

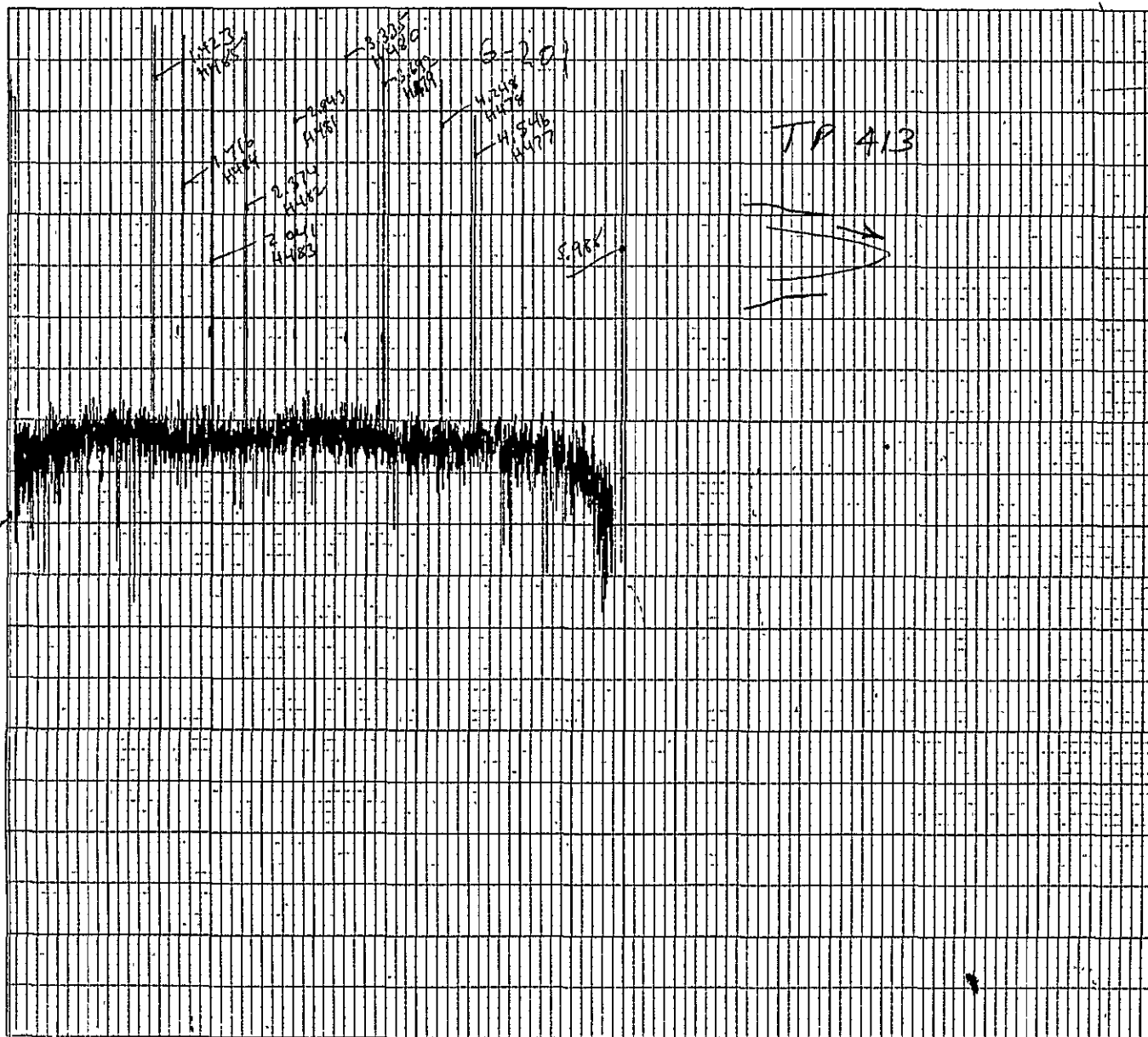
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 200	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL R : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- 468 TO H- 476	

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1017

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DATE: 10/22/81 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 413

PLOT IDENTIFICATION: G - 201

TRAVERSE DETAILS.

AXIAL ☐ : $\frac{d}{L}$ - ☐ ; OFFSET - ☐

RADIAL REF. (C) - VOLTS $\frac{R}{R_2}$

LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS $\frac{X}{d}$

LOCATIONS: TRAVERSE - VOLTS $\frac{X}{d}$

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 413 F.P.S./UNIT

HISTOGRAMS: H- 477 TO H- 986

LINE OF LU TRAVERSE

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8101

AXIAL MEAN VELOCITY: V_j/U_{j0}

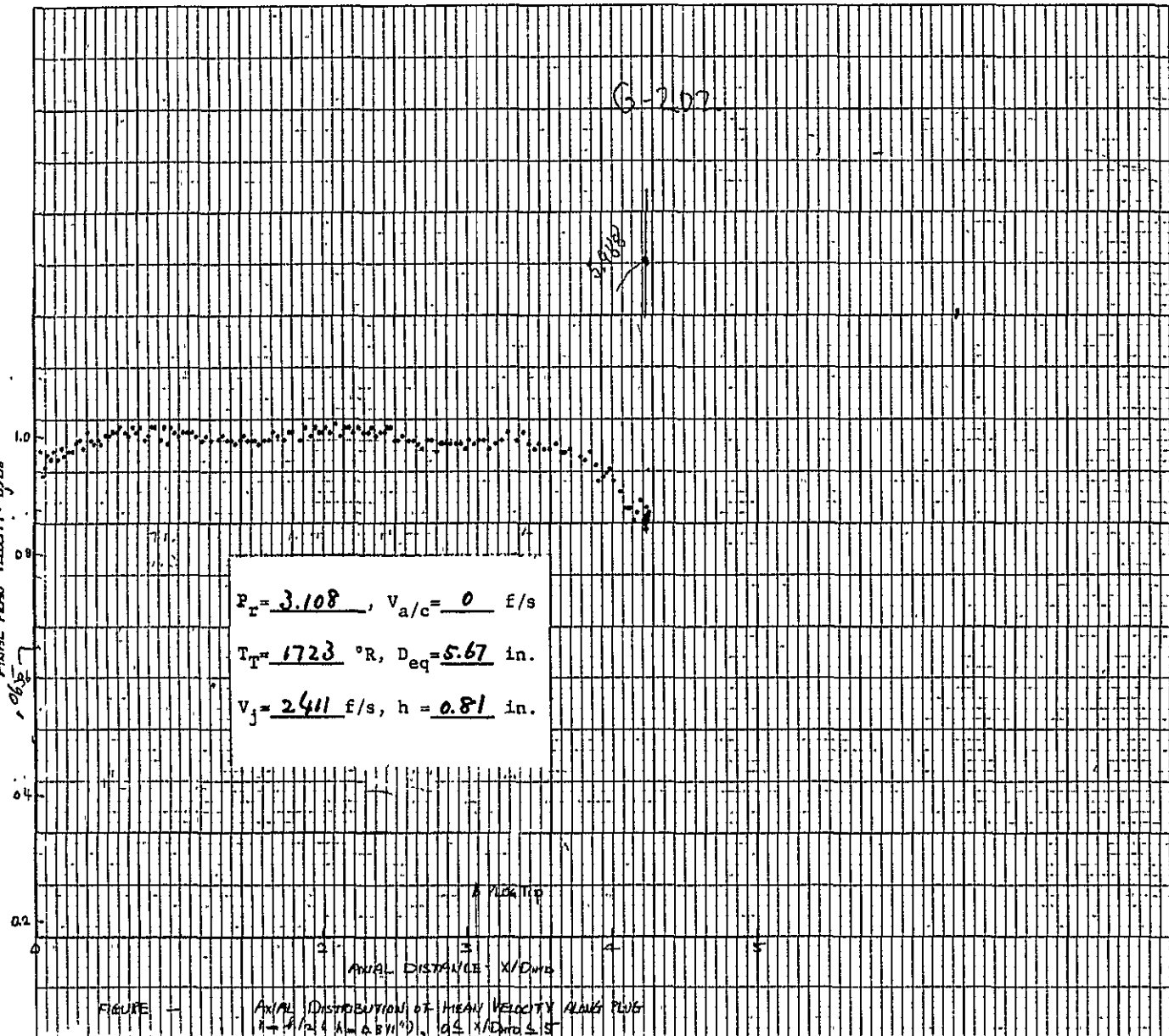
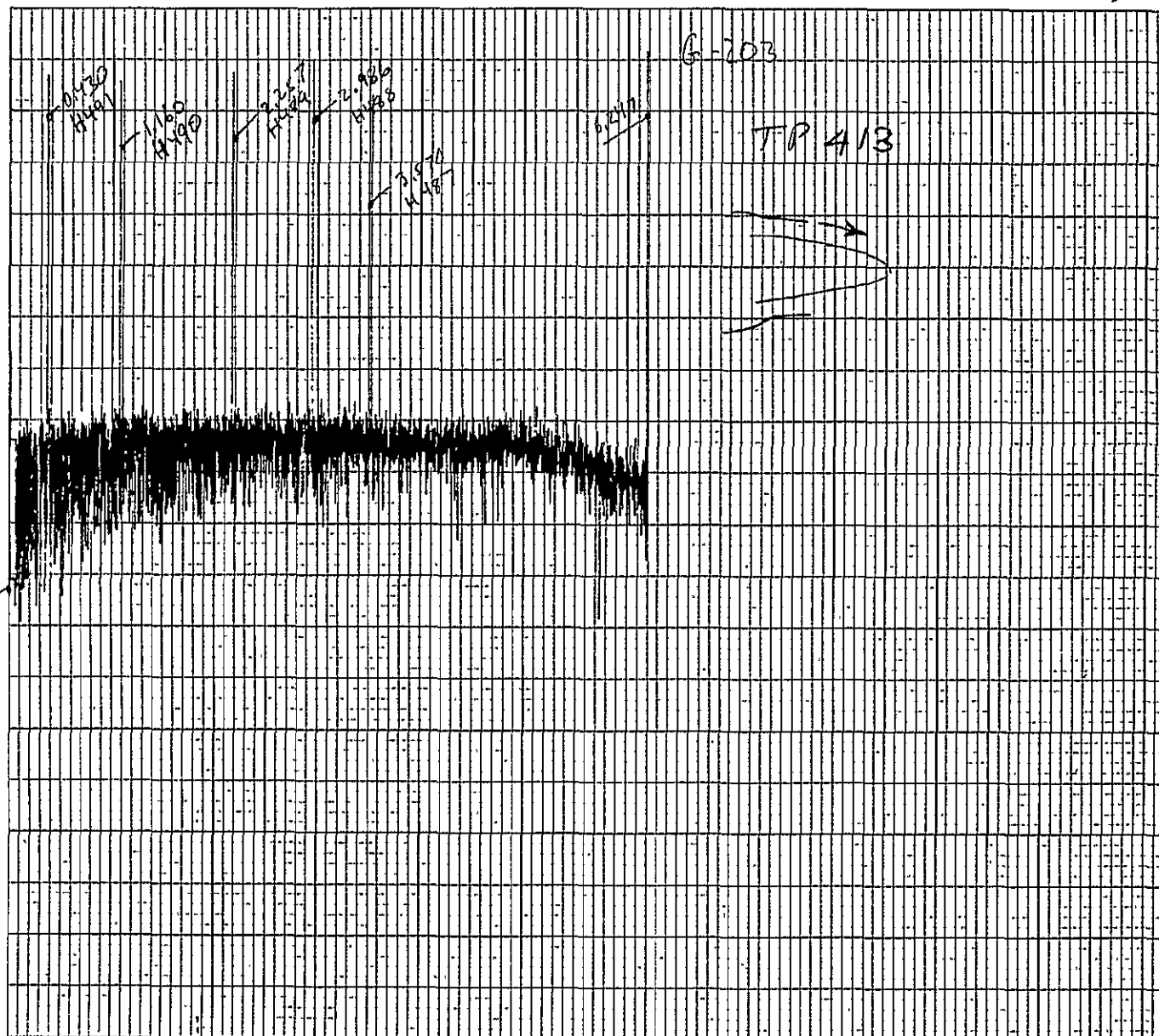


FIGURE 1
AXIAL DISTRIBUTION OF MEAN VELOCITY ALONG PLUG
 $R = 1.24$ in. $D_{eq} = 5.67$ in. $Q = 1.0$ cfs

DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 413
PLOT IDENTIFICATION: G - 202	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 10/22/81 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 413

PLOT IDENTIFICATION: G - 203

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS) R -

LOCATIONS TRAVERSE - VOLTS) R₂

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. (ϕ) - VOLTS) X -

LOCATIONS TRAVERSE - VOLTS) X_{eq}

SCALE : X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 413 F.P.S./UNIT

HISTOGRAMS: H- 487 TO H- 491

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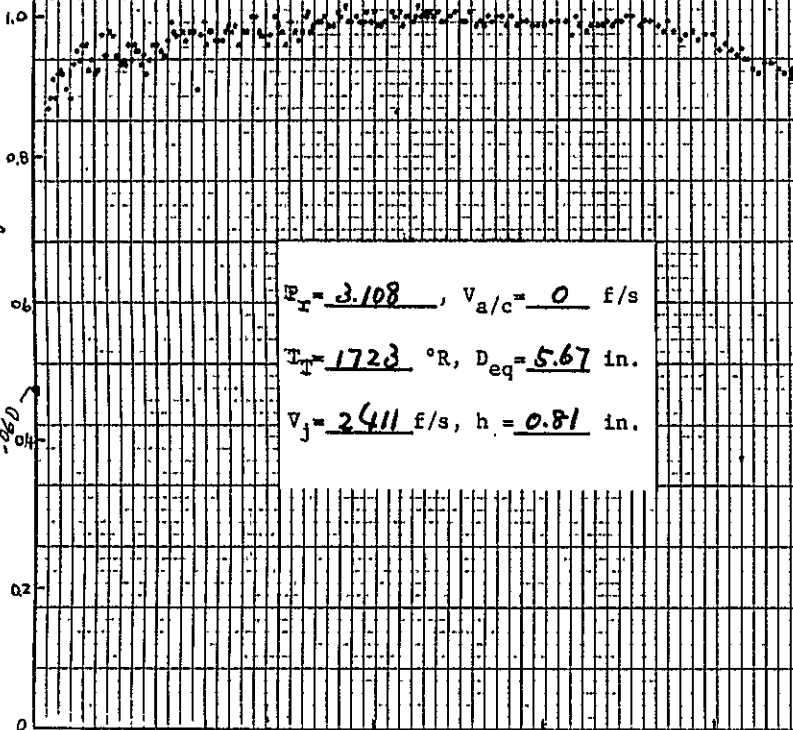
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CHARTING DEPARTMENT, GEORGE EASTMAN PHOTOGRAPHIC COMPANY, NEW YORK, N.Y.

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AXIAL MEAN VELOCITY: V_{j0}



$P_z = 3.108$, $V_{a/c} = 0$ f/s

$T_z = 1723$ °R, $D_{eq} = 5.67$ in.

$V_j = 2411$ f/s, $h = 0.81$ in.

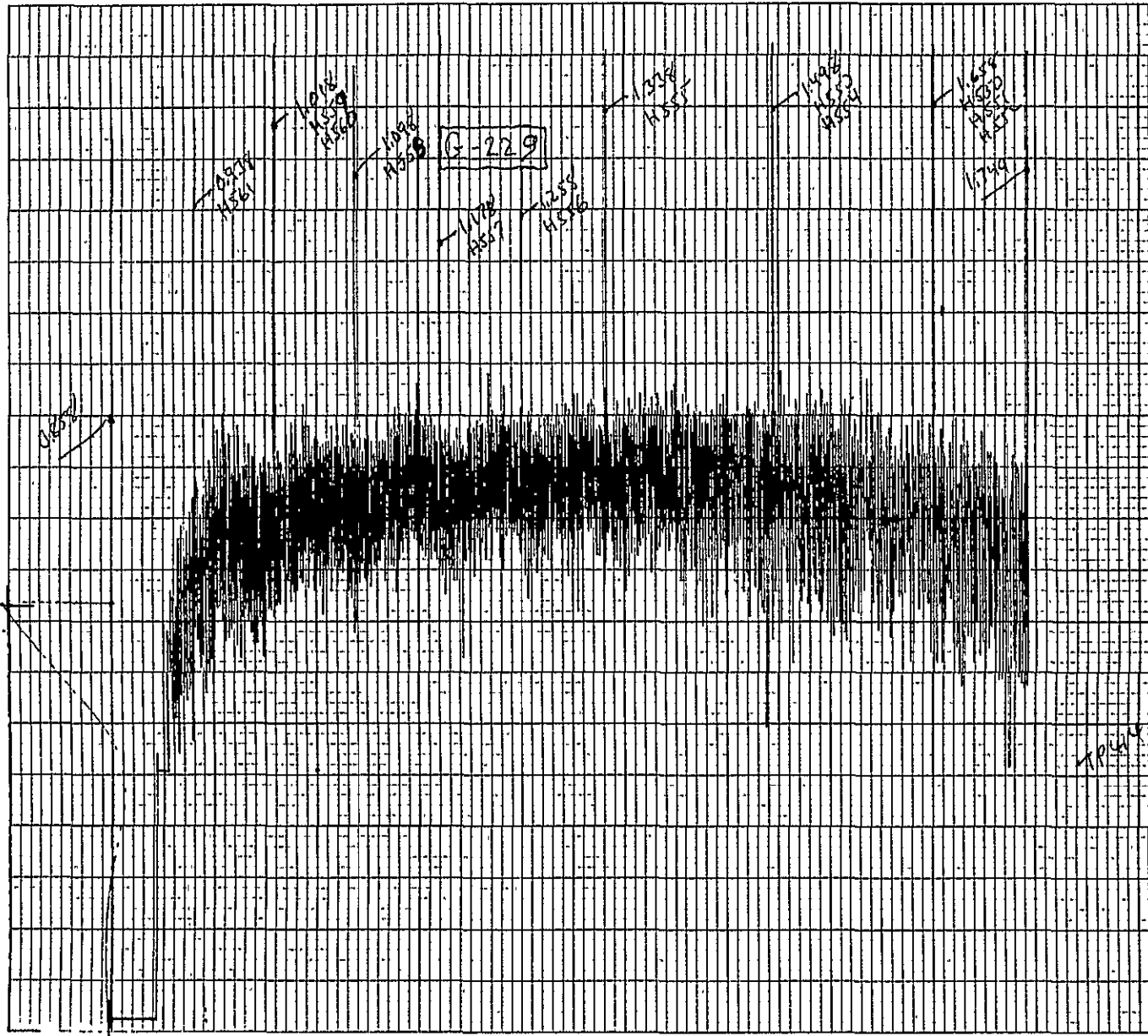
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC -413
PLOT IDENTIFICATION: G - 204	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> ; E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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Model 4
Test Point 414

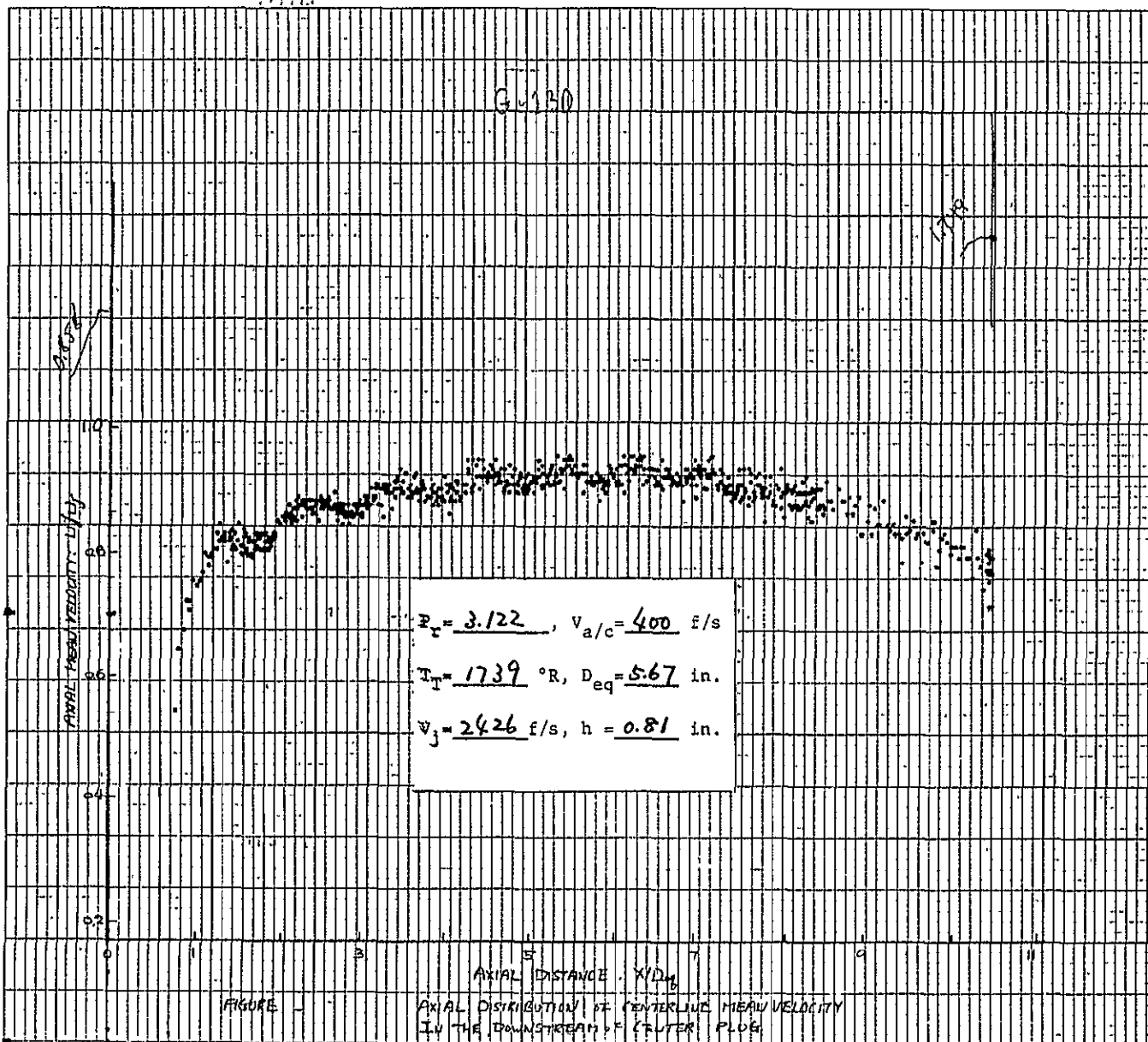
1022

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DATE: 10/27/81	NOZZLE: # 4
TEST POINT: L.V. -	ACOUSTIC - 44
PLOT IDENTIFICATION: G - 229	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 \approx 0$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS $X =$
LOCATIONS TRAVERSE -	VOLTS $D =$
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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$P_r = 3.122$, $v_{a/c} = 400$ f/s
 $T_T = 1739$ °R, $D_{eq} = 5.67$ in.
 $v_j = 2426$ f/s, $h = 0.81$ in.

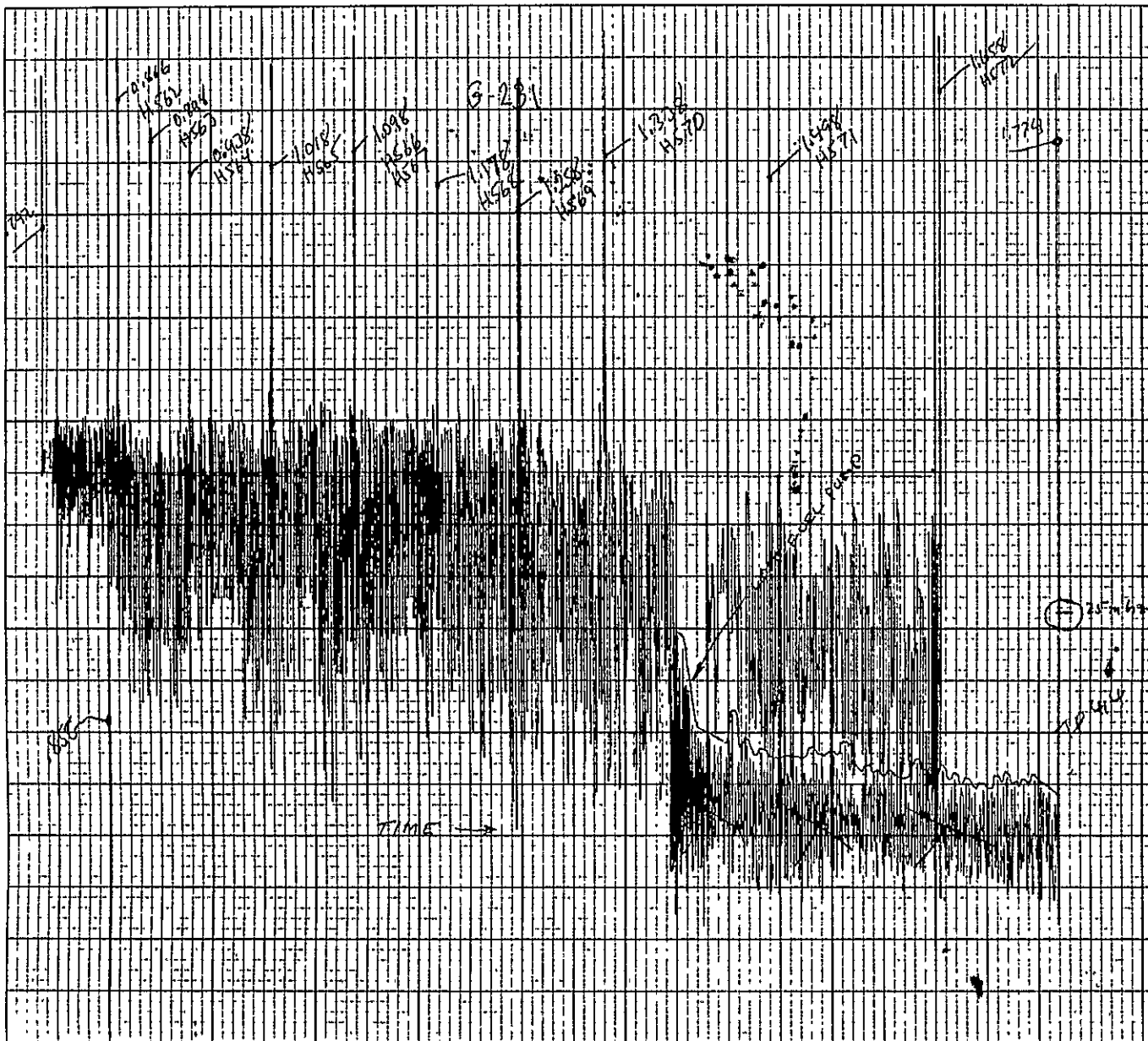
FIGURE - AXIAL DISTRIBUTION OF CENTERLINE MEAN VELOCITY
IN THE DOWNSTREAM OF CENTER PLUG

DATE: 10/27/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 230	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL [] : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1024

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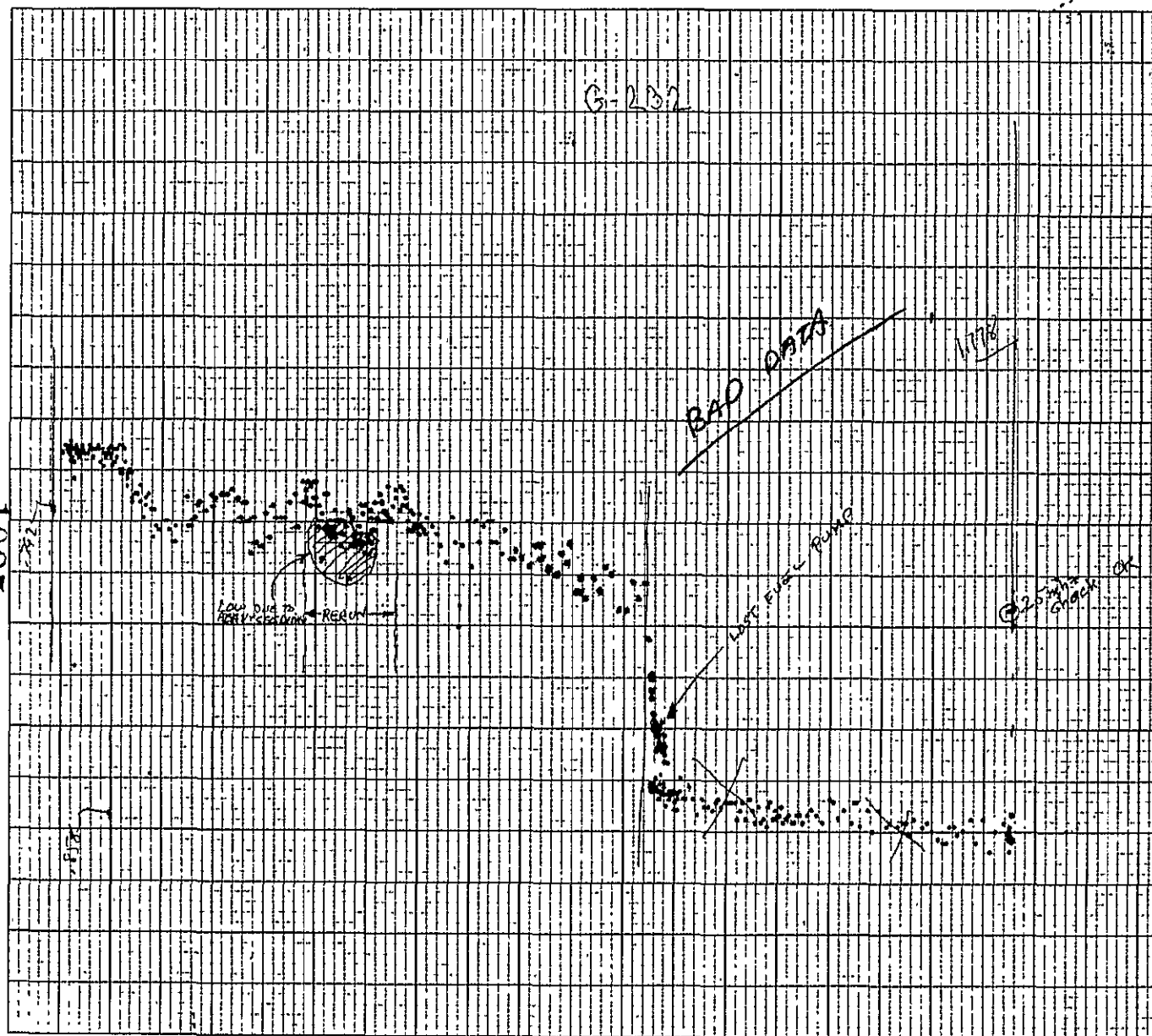
DATE: 10/27/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 231	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- 562 TO H- 672	

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1011 XY 1101

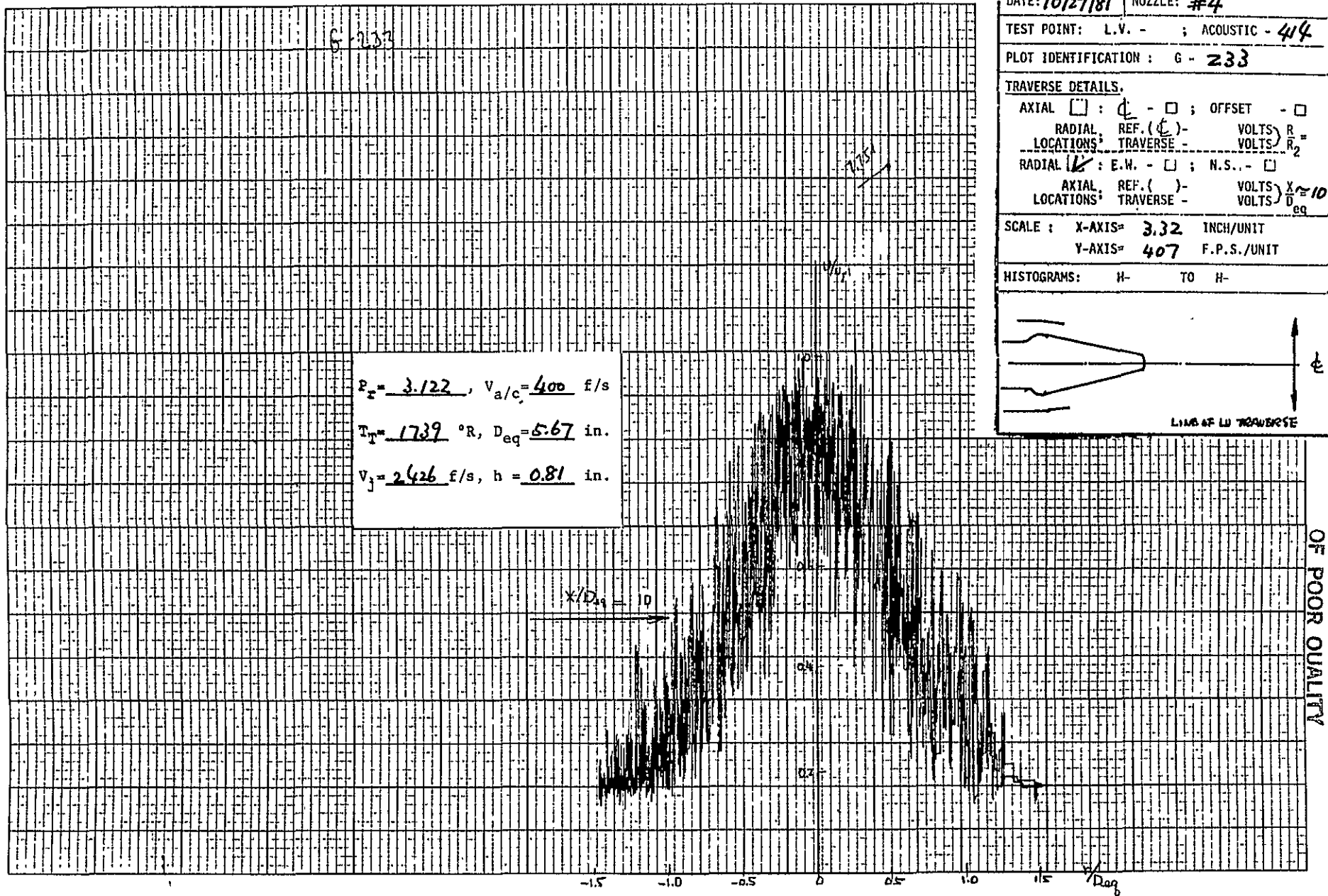
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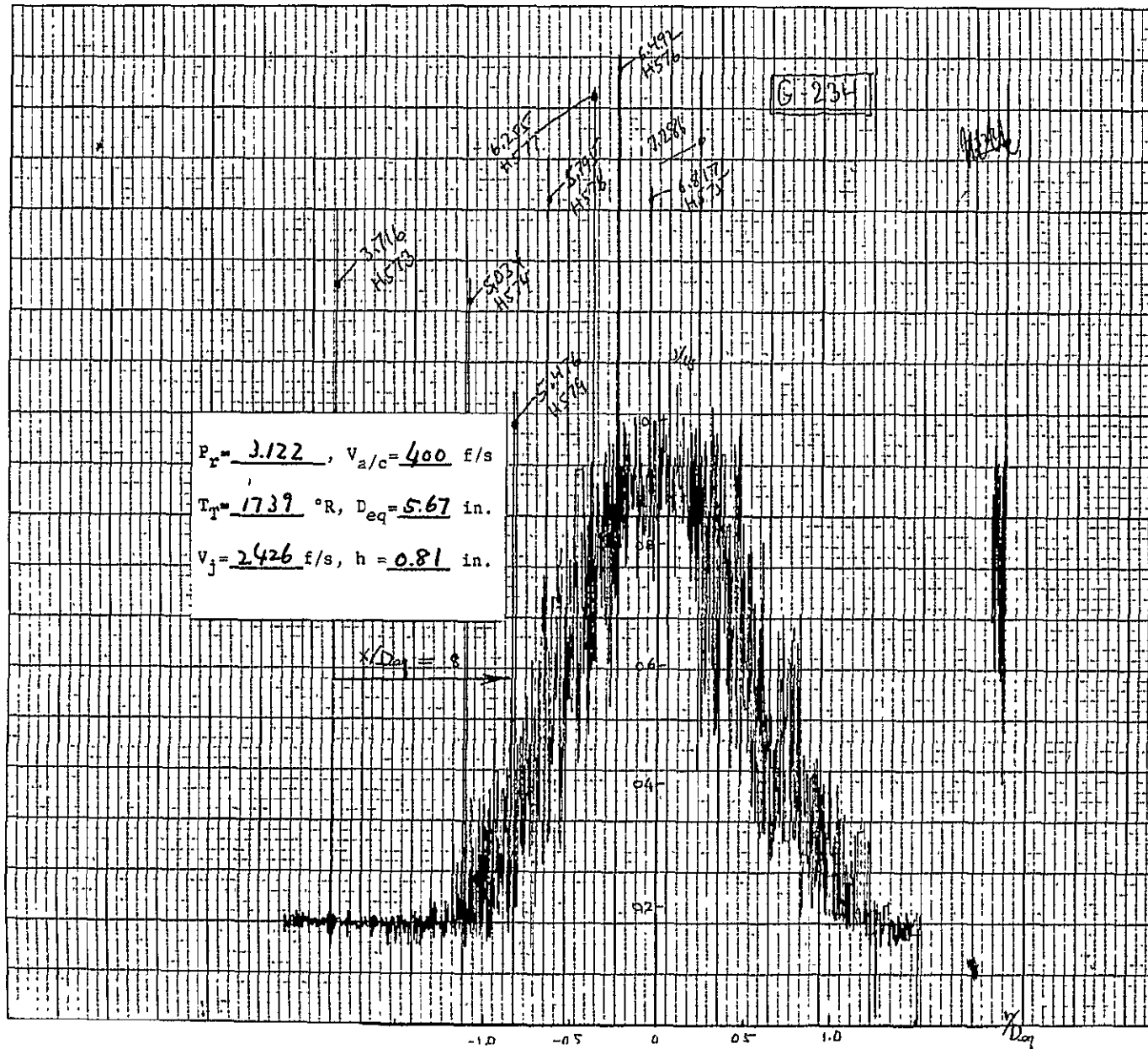


DATE: 10/27/81	NOZZLE: # 4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 232	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_1 \approx 1$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

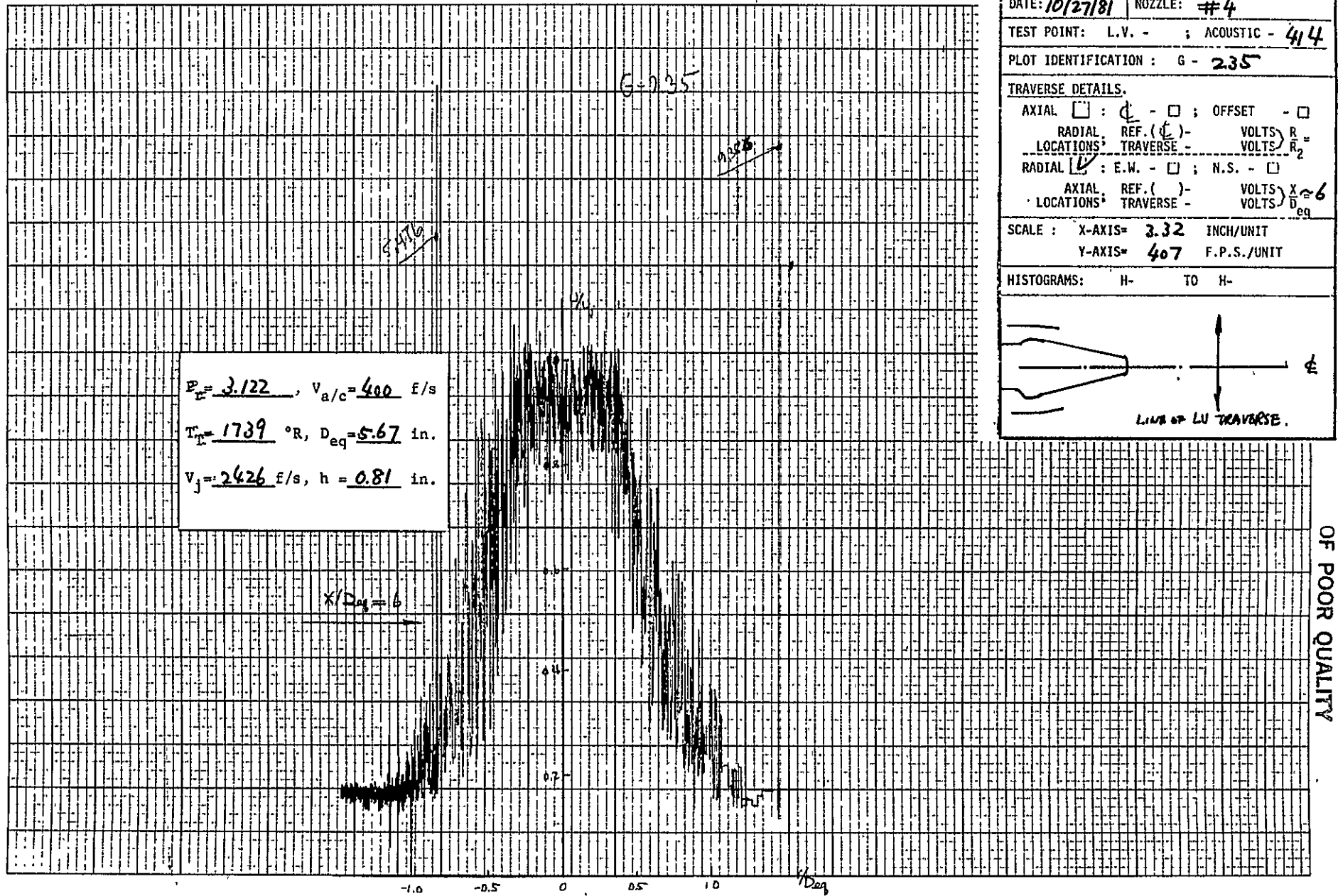
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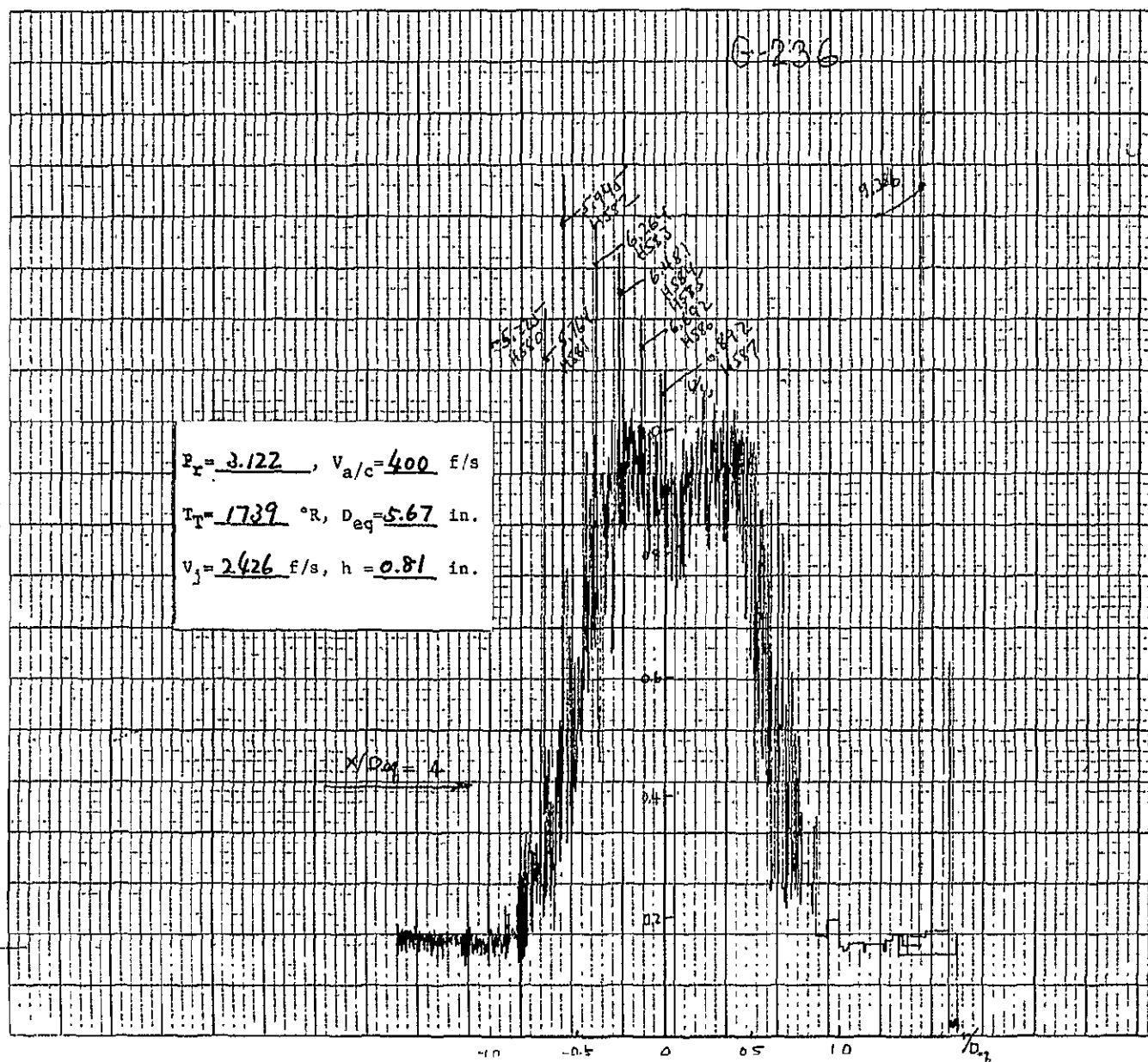
DATE: 10/27/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 234	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- 573 TO H- 579	



DATE: 10/27/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 414	
PLOT IDENTIFICATION: G - 235	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{x}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{x}{D_{eq}}$	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1029

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DATE: 10/27/87 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 414

PLOT IDENTIFICATION : G - 236

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_2 =

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ϕ : E.W. - ☐ ; N.S. - ☐

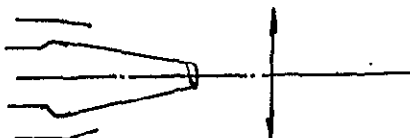
AXIAL REF. () - VOLTS $X \approx 4$

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 3.32 INCH/UNIT

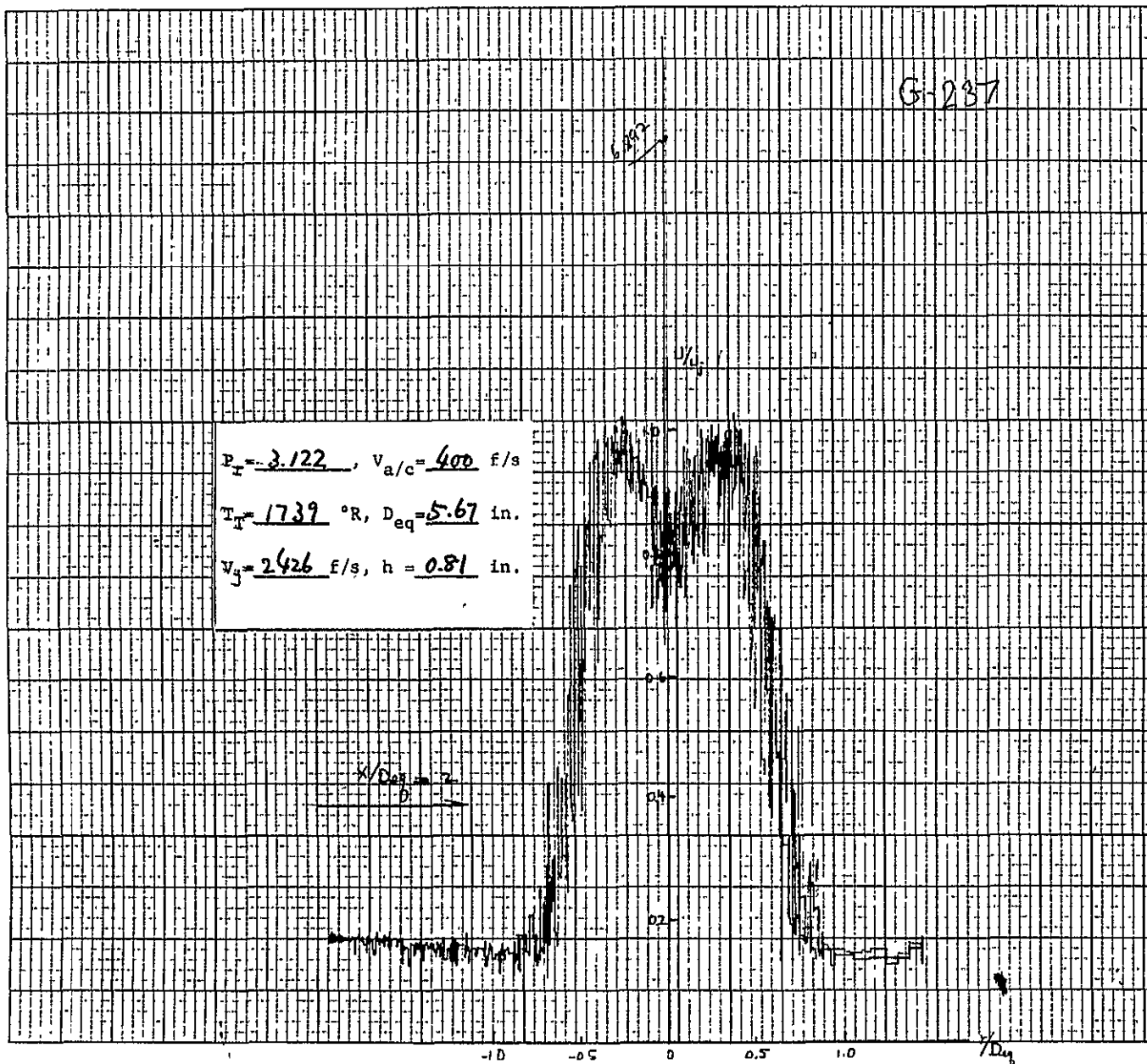
Y-AXIS= 407 F.P.S./UNIT

HISTOGRAMS: H- TO H-



LINE OF TRAVERSE

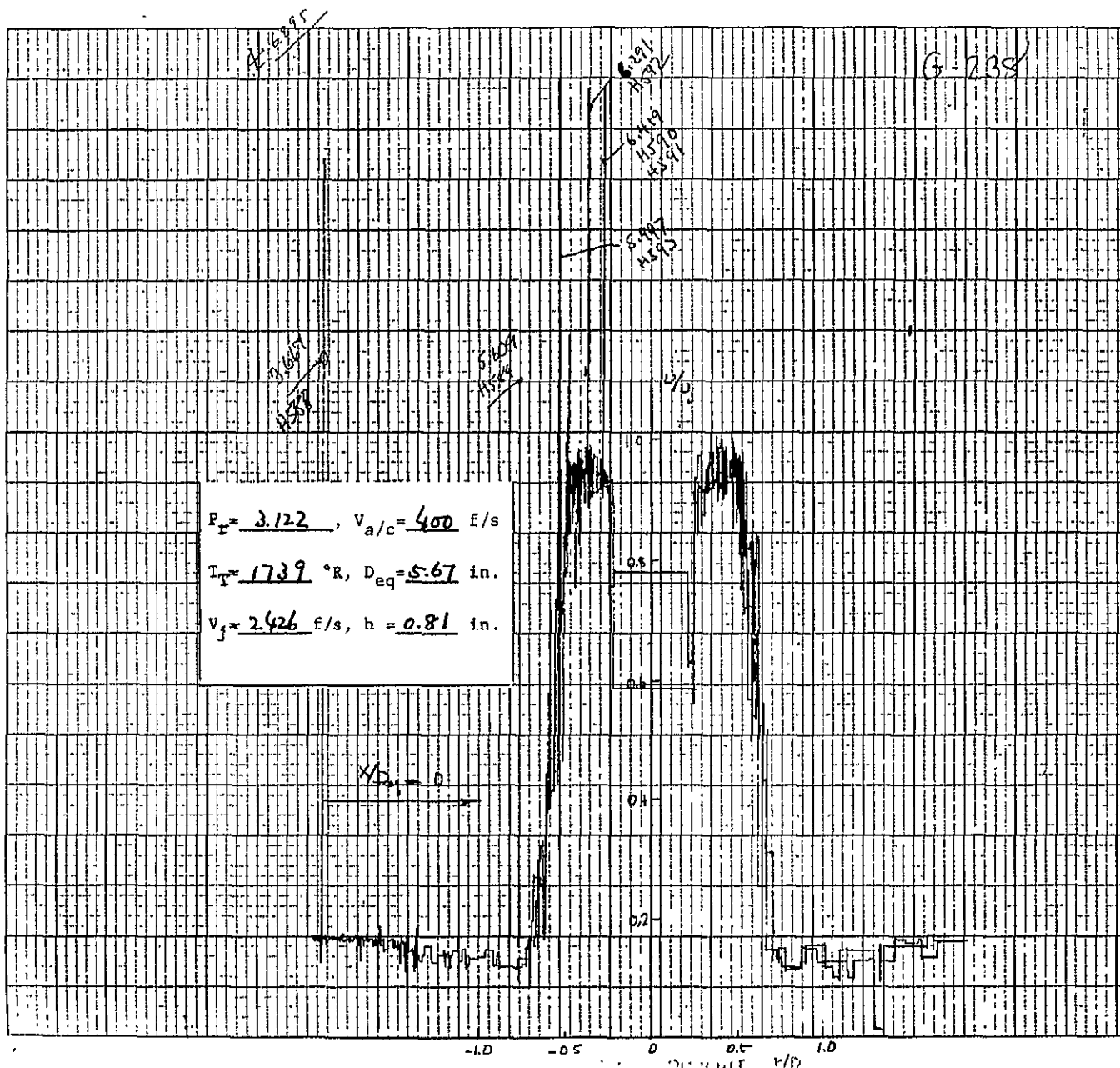
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DATE: 10/27/81	NOZZLE: # 4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 237	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X \approx 2$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1031

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DATE: 10/27/81 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 414

PLOT IDENTIFICATION: G - 238

TRAVERSE DETAILS.

AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐

RADIAL REF. () - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

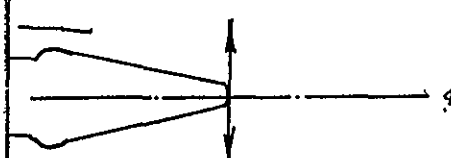
AXIAL REF. () - VOLTS X_D

LOCATIONS: TRAVERSE - VOLTS eq

SCALE: X-AXIS= 3.32 INCH/UNIT

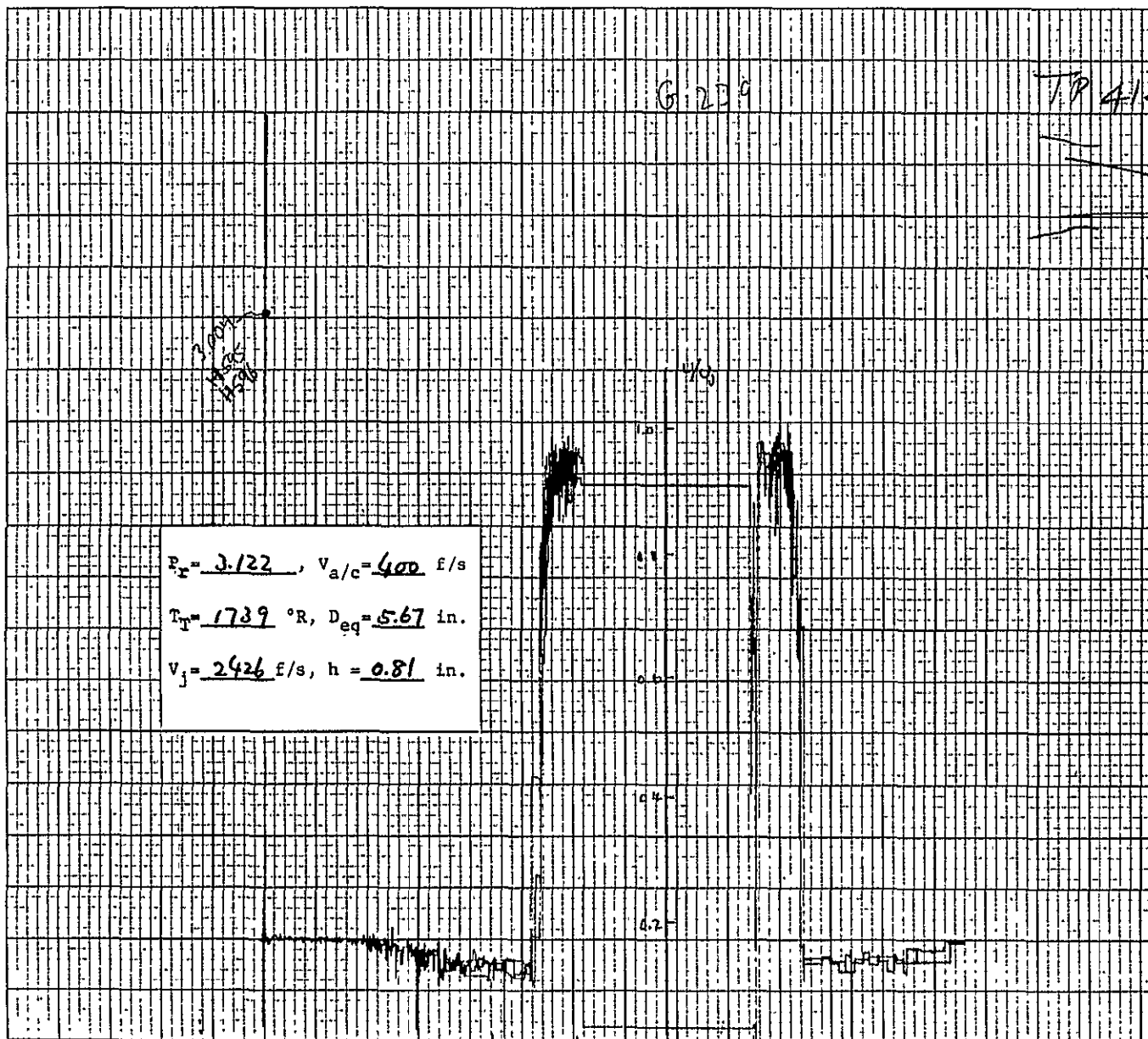
Y-AXIS= 407 F.P.S./UNIT

HISTOGRAMS: H- TO H-



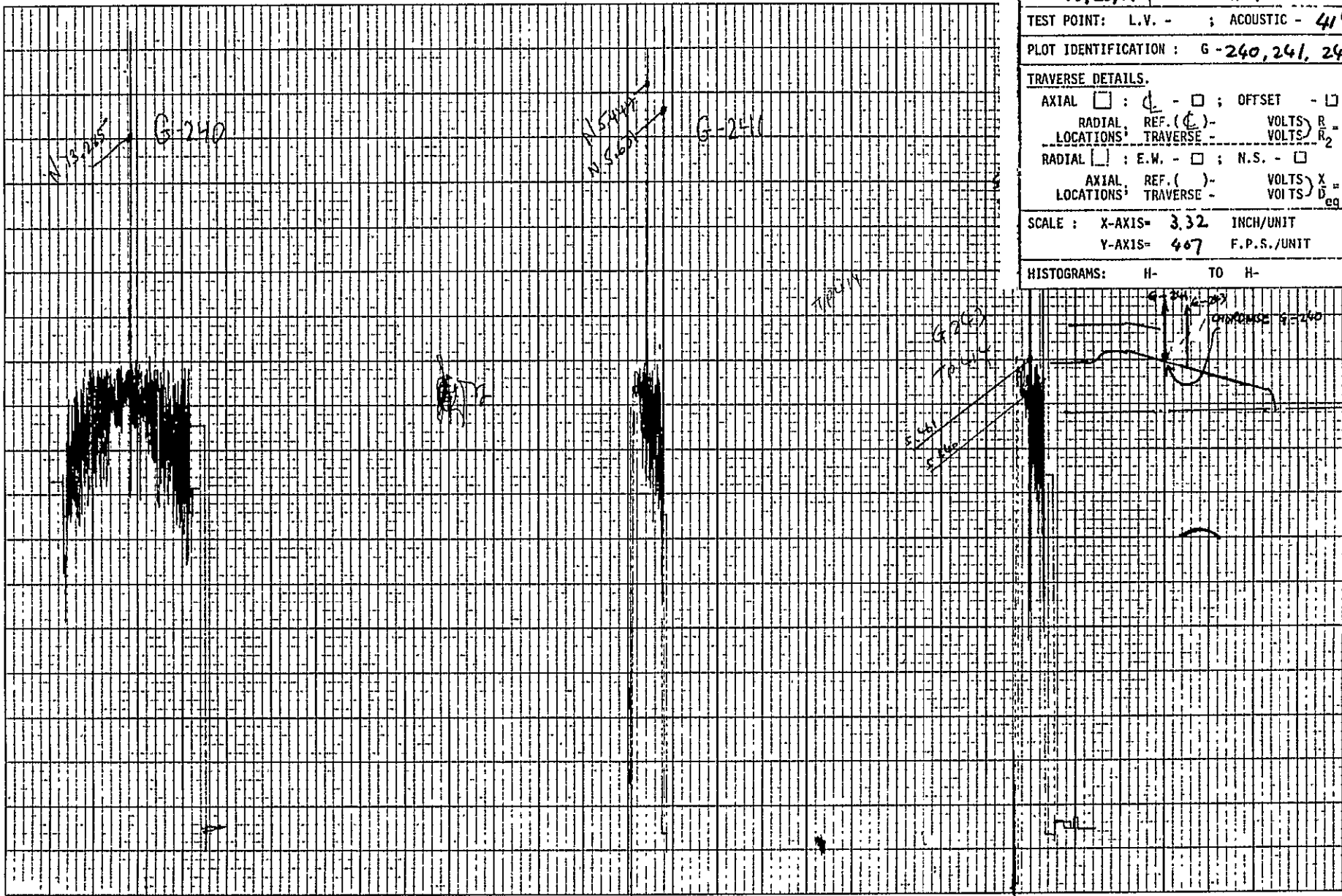
LINE OF W TRAVERSE

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DATE: 10/27/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 44	
PLOT IDENTIFICATION: G - 239	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_2	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X_{eq}	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G-240, 241, 243	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL: REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL: REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.32	INCH/UNIT
Y-AXIS= 407	F.P.S./UNIT
HISTOGRAMS: H-	TO H-

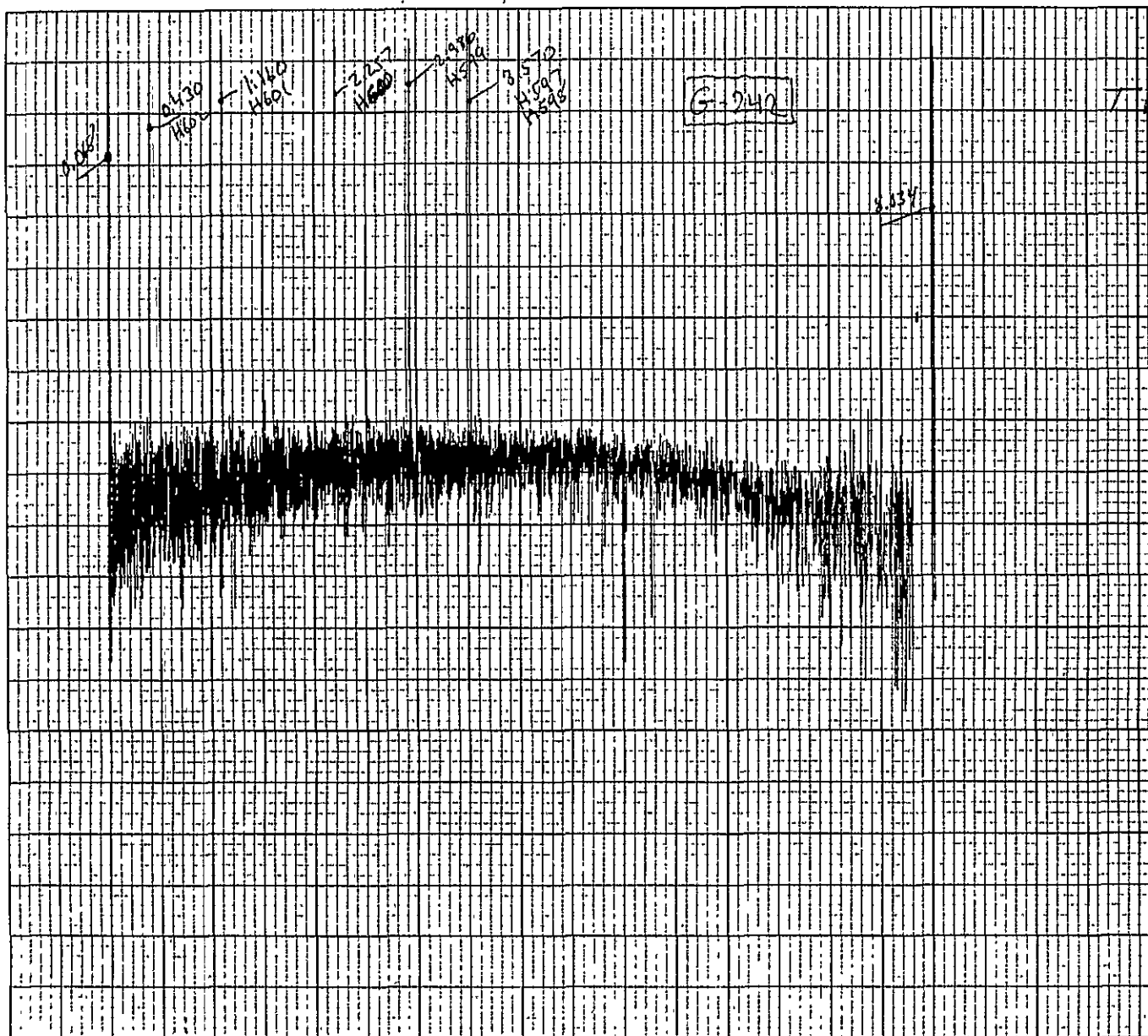


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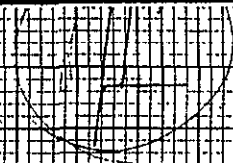
1033

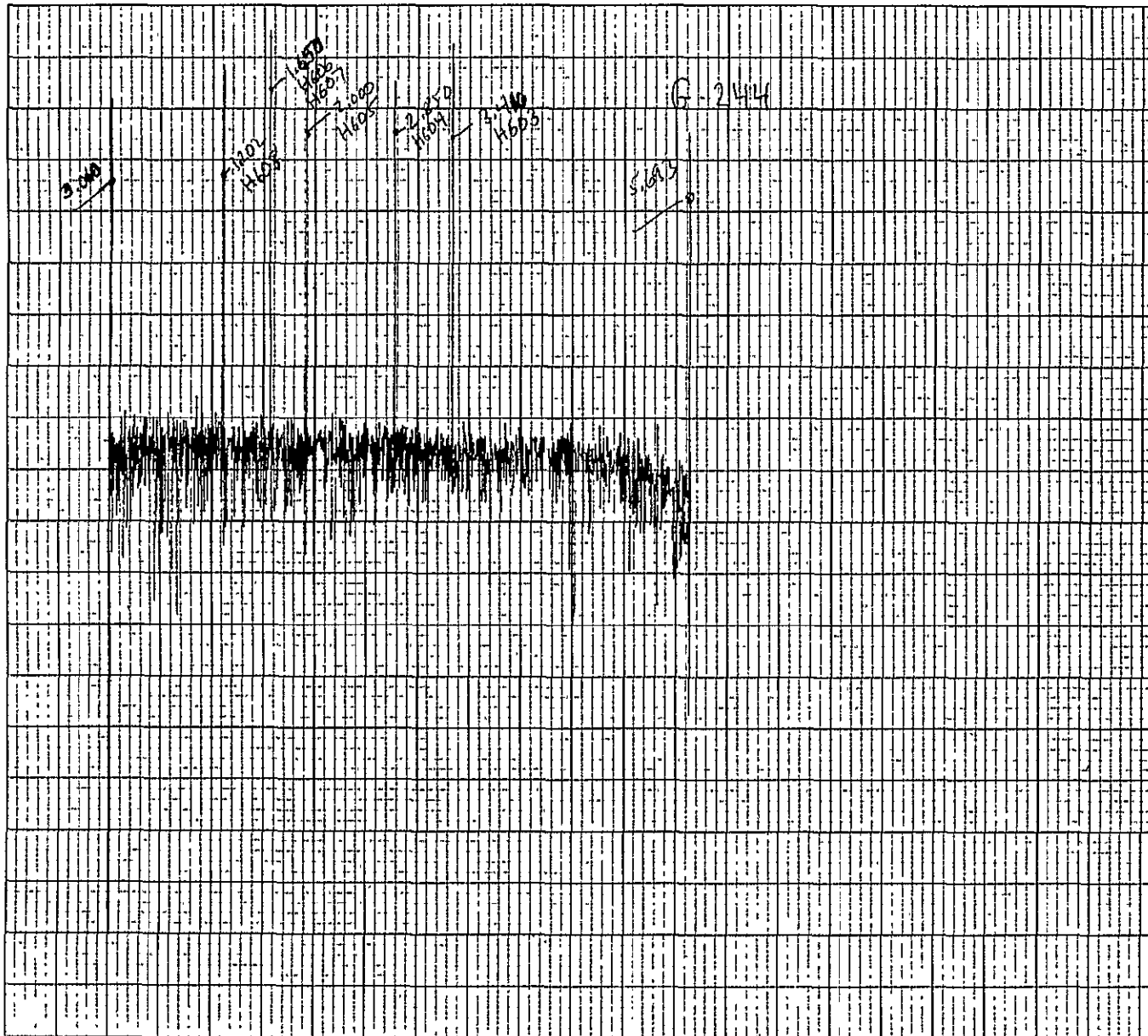
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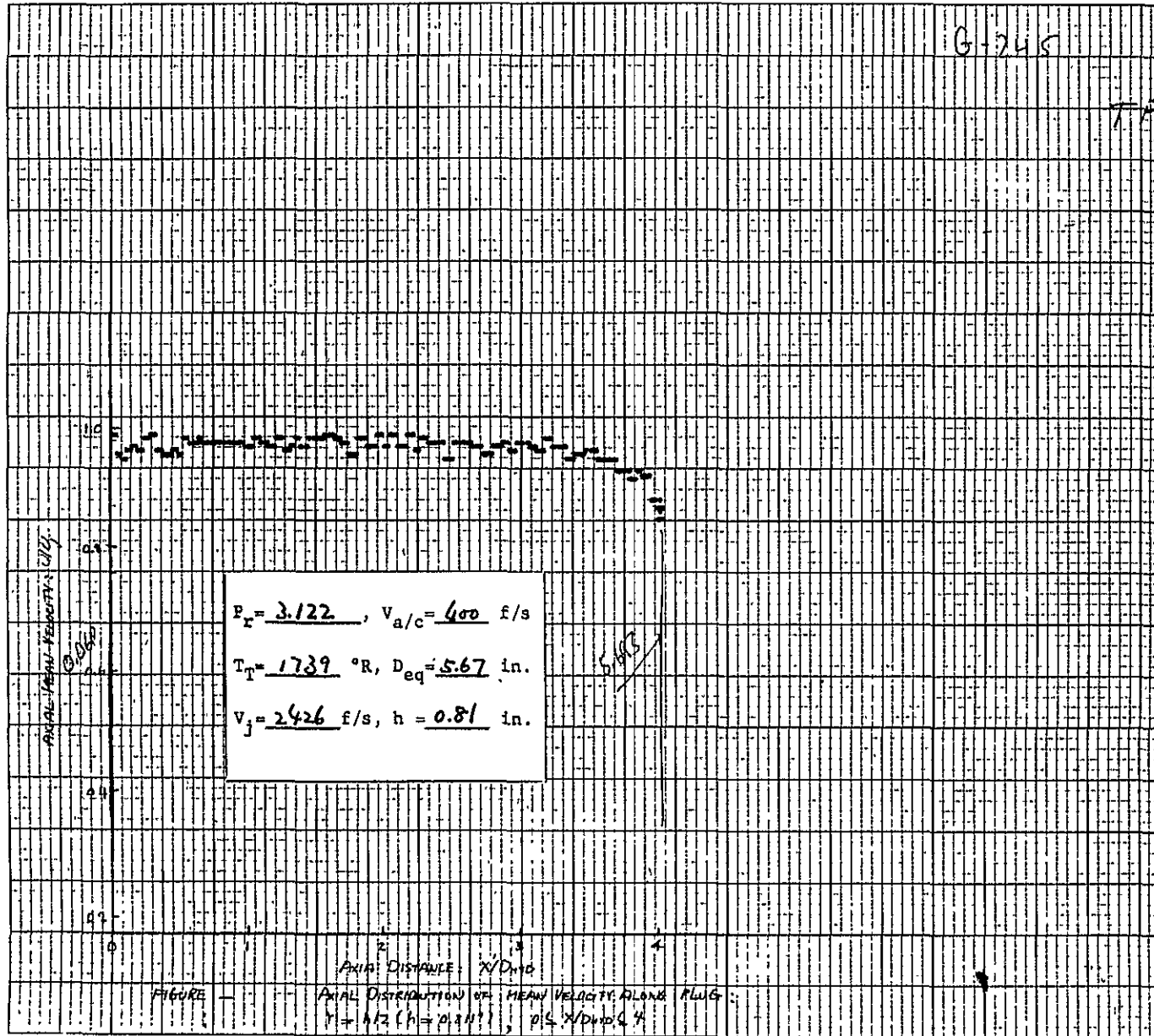
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 242	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS, TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS, TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- 697 TO H- 602	





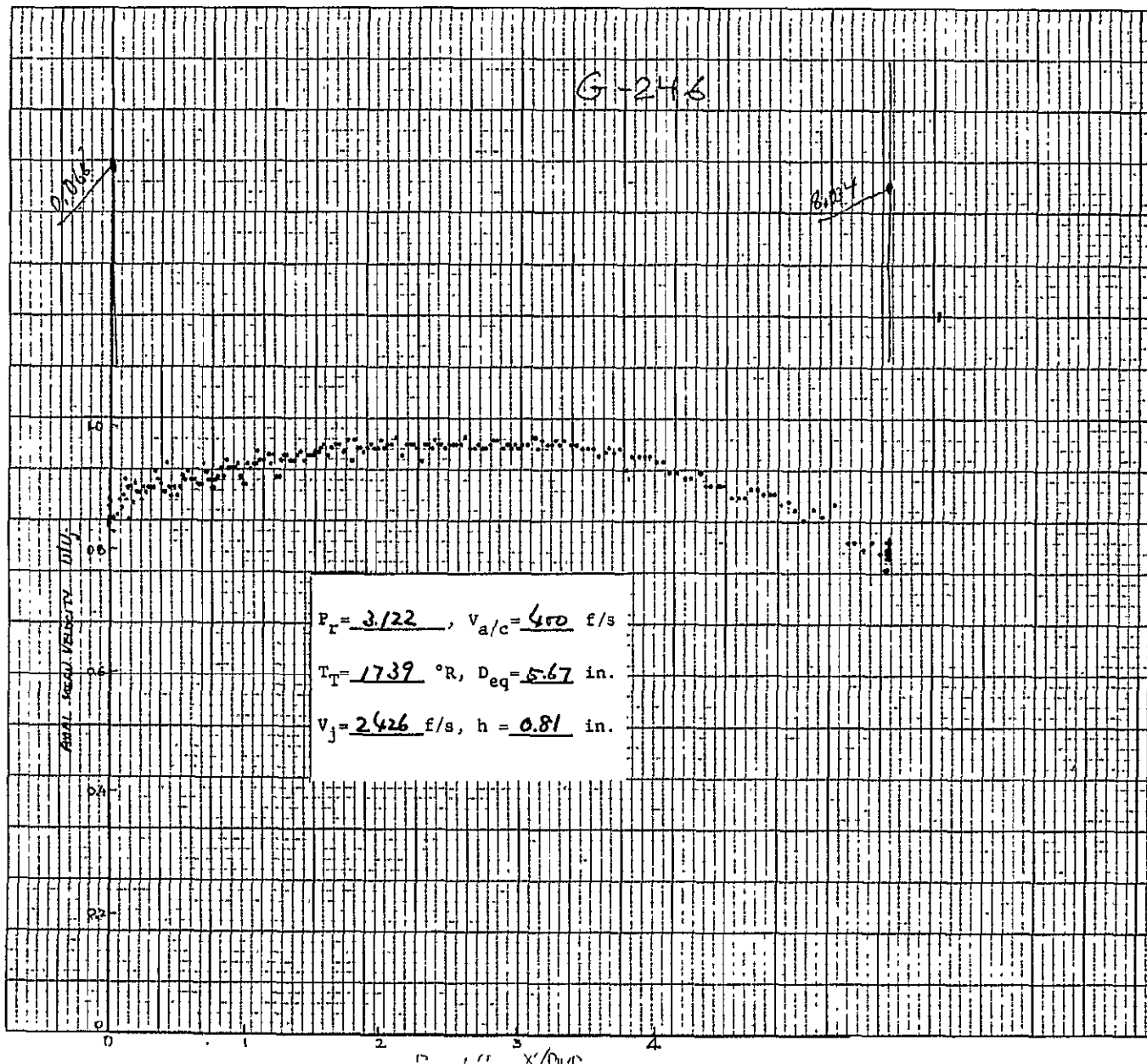
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 44
PLOT IDENTIFICATION: G - 244	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- 603 TO H- 608	

300



DATE: 10/28/81		NOZZLE: #4	
TEST POINT: L.V. -		ACOUSTIC - 414	
PLOT IDENTIFICATION: G - 245			
TRAVERSE DETAILS.			
AXIAL <input type="checkbox"/>	REF. (C) -	OFFSET - <input type="checkbox"/>	
RADIAL <input type="checkbox"/>	LOCATIONS: TRAVERSE -	VOLTS R_2	
RADIAL <input type="checkbox"/>	E.W. - <input type="checkbox"/>	N.S. - <input type="checkbox"/>	
AXIAL <input type="checkbox"/>	REF. () -	VOLTS X_{eq}	
LOCATIONS: TRAVERSE -		VOLTS D_{eq}	
SCALE: X-AXIS = 2.22		INCH/UNIT	
Y-AXIS = 407		F.P.S./UNIT	
HISTOGRAMS: H-		TO H-	

FD-37



DATE: 10/28/81 NOZZLE: #4

TEST POINT: L.V. - ; ACOUSTIC - 414

PLOT IDENTIFICATION: G - 246

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
RADIAL REF. (ϕ) - VOLTS R
LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D eq

SCALE: X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 407 F.P.S./UNIT

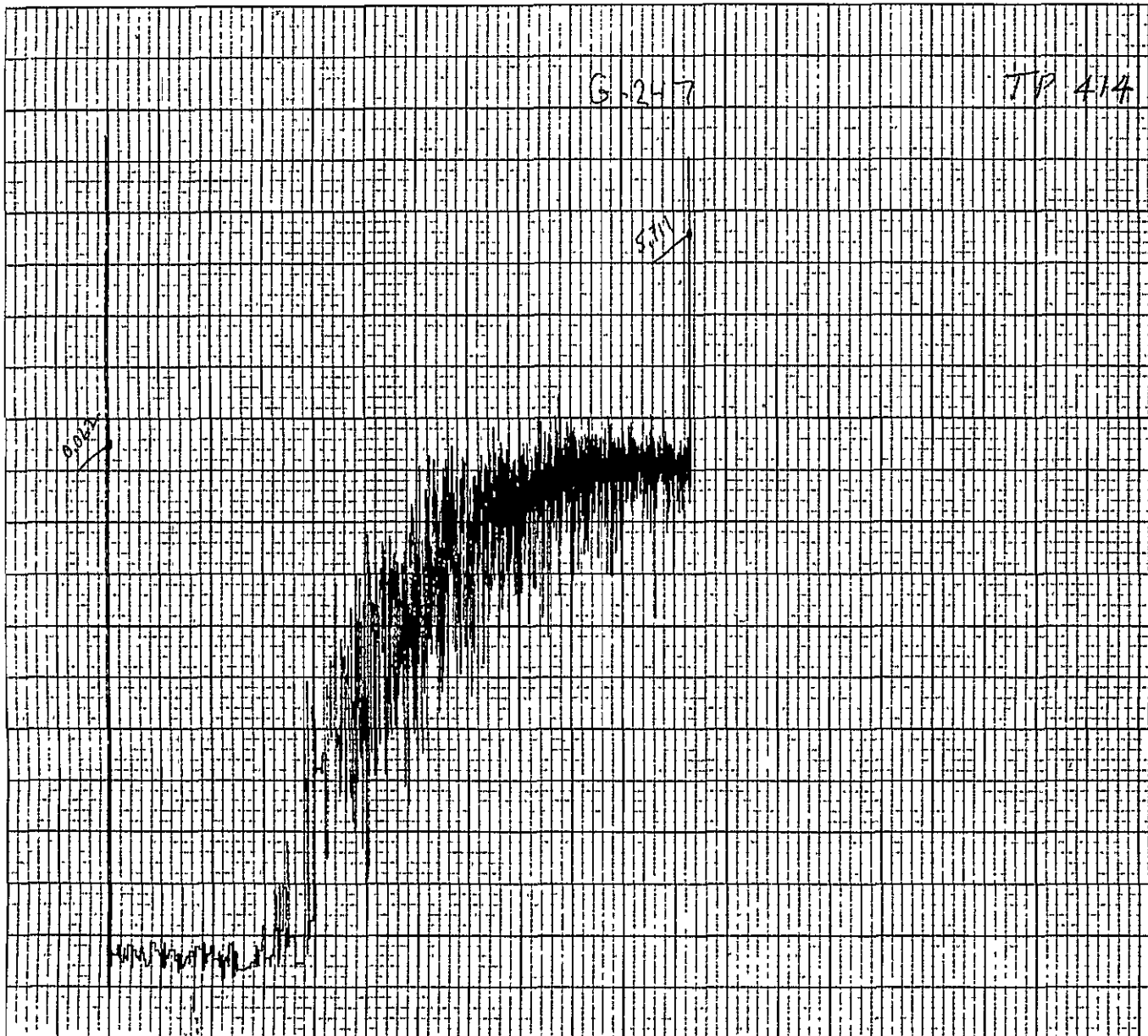
HISTOGRAMS: H- TO H-

LINE OF W TRAVERSE

ϕ

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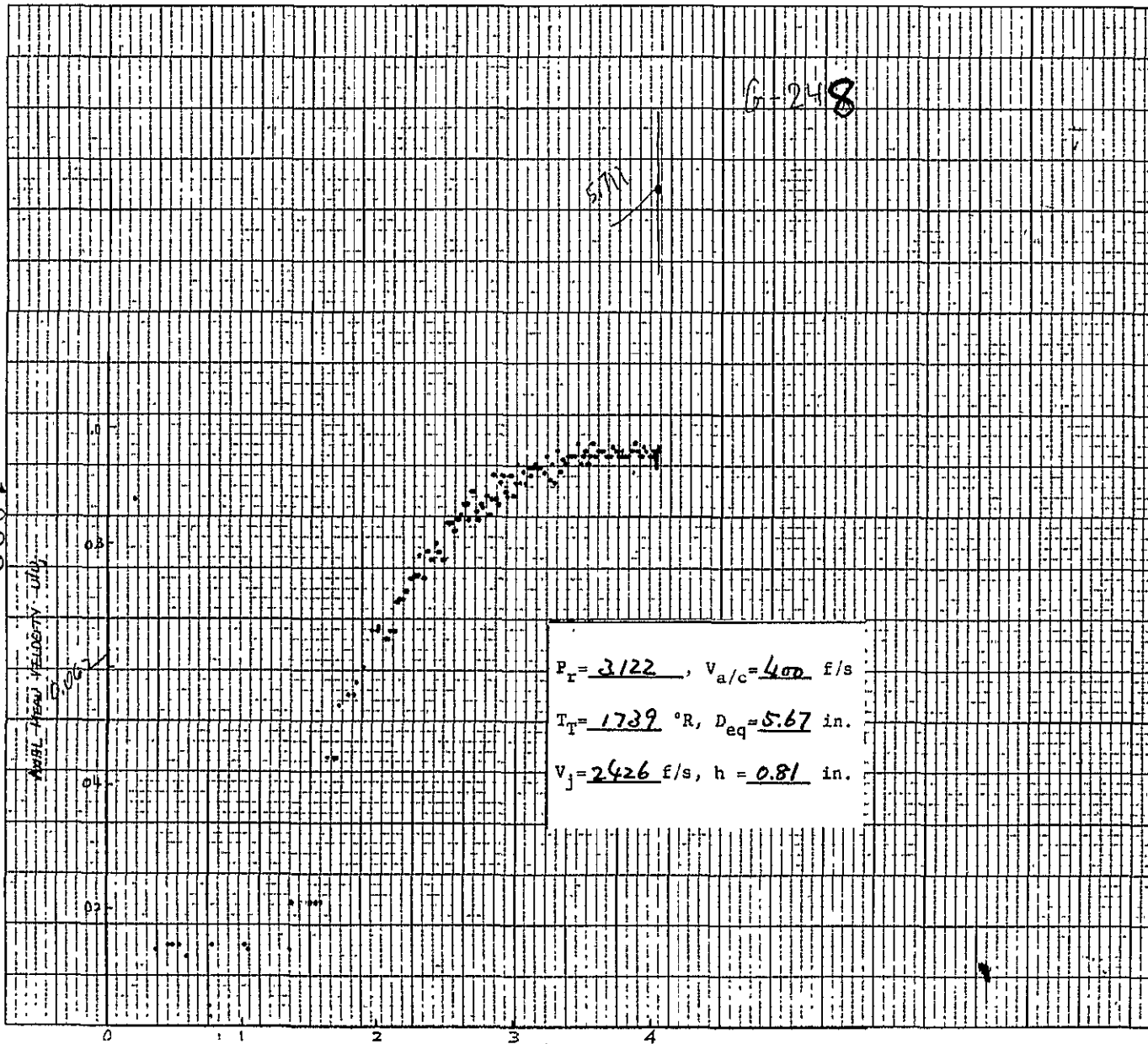
1036



DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 414	
PLOT IDENTIFICATION: G - 247	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1039



$$P_r = 3.122, v_{a/c} = 4.00 \text{ f/s}$$

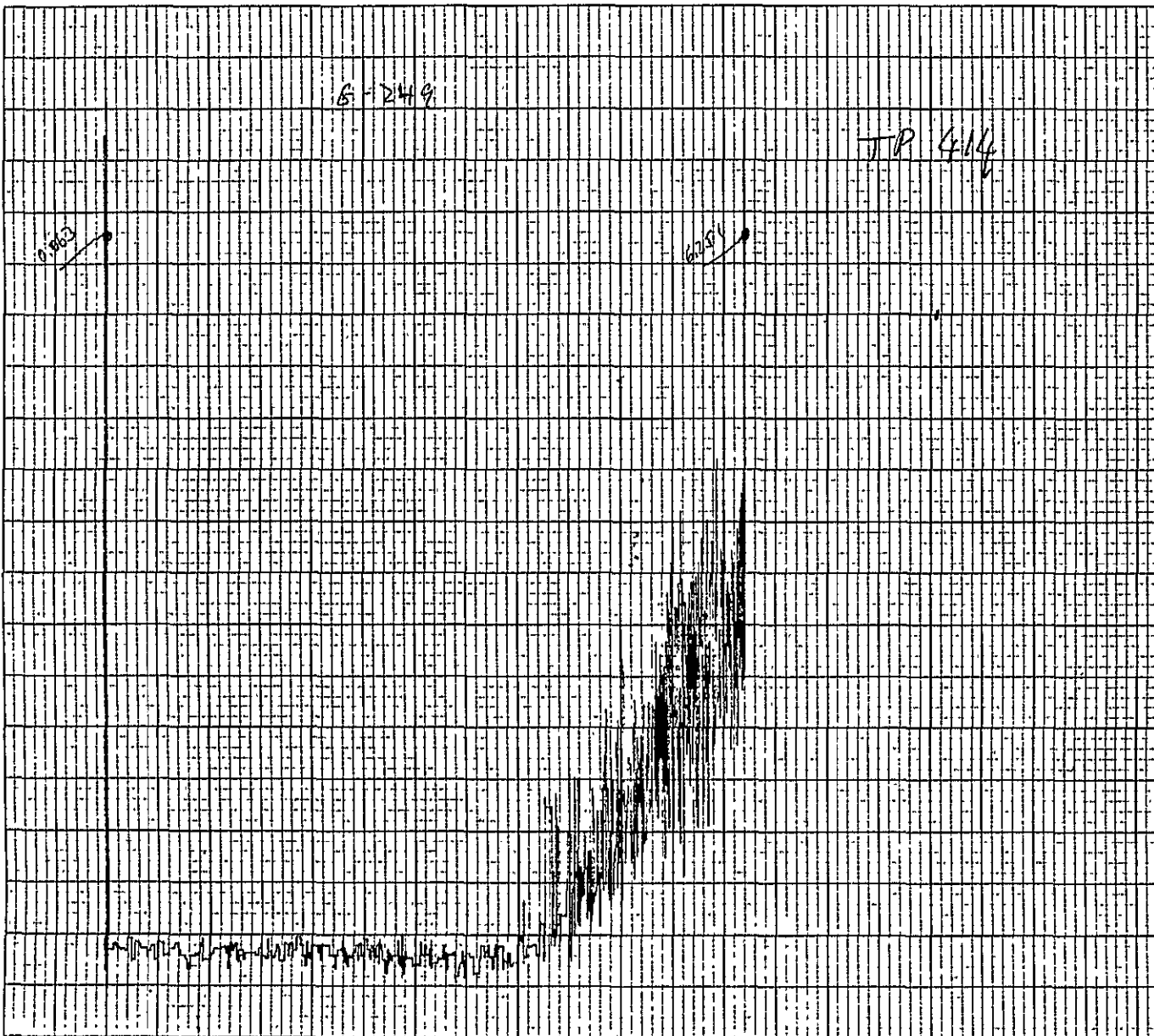
$$T_r = 1739^\circ \text{R}, D_{eq} = 5.67 \text{ in.}$$

$$V_j = 2426 \text{ f/s}, h = 0.81 \text{ in.}$$

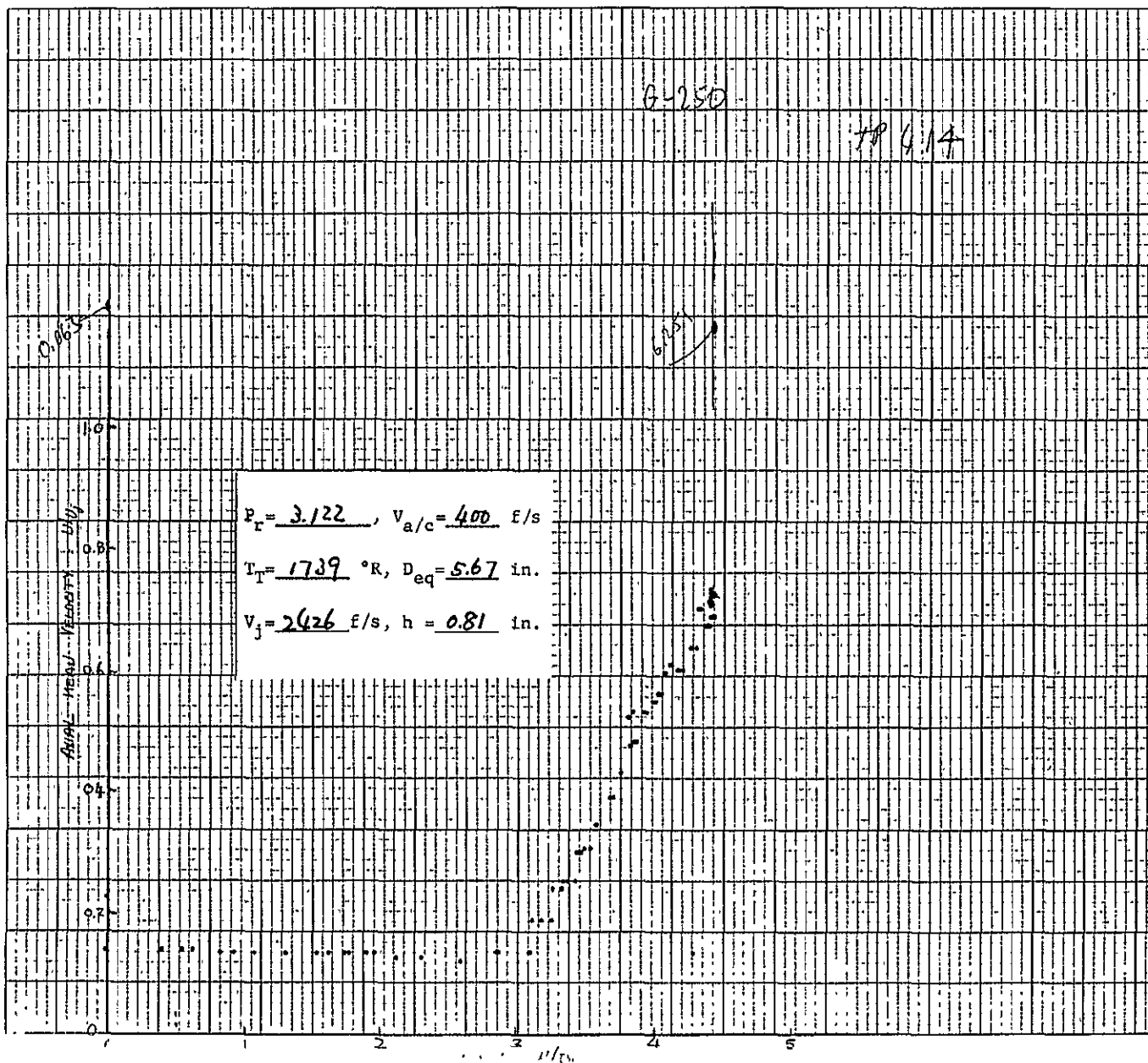
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 414
PLOT IDENTIFICATION: G - 248	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 414	
PLOT IDENTIFICATION : G - 249	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

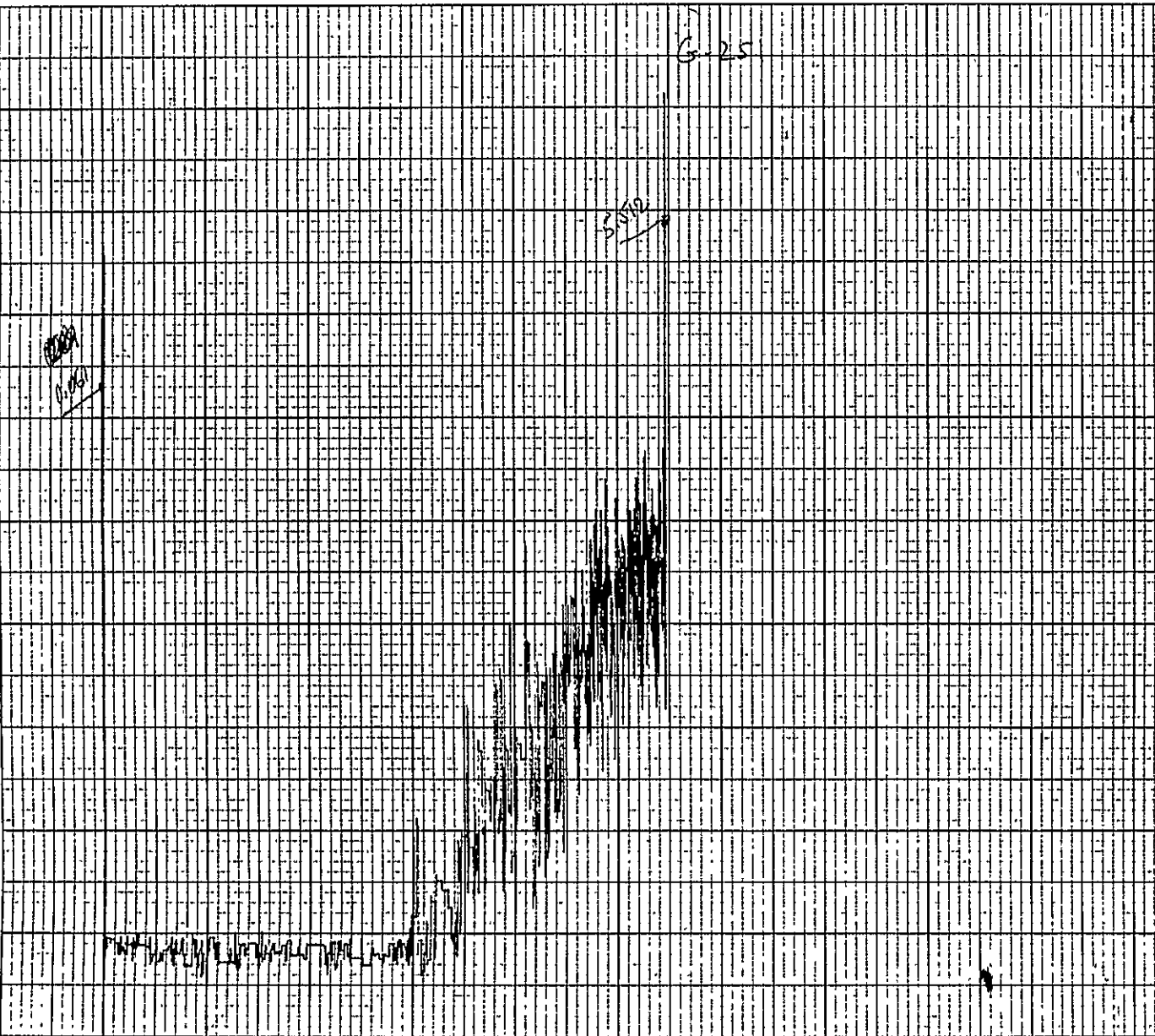


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DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 414	
PLOT IDENTIFICATION: G - 250	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1042



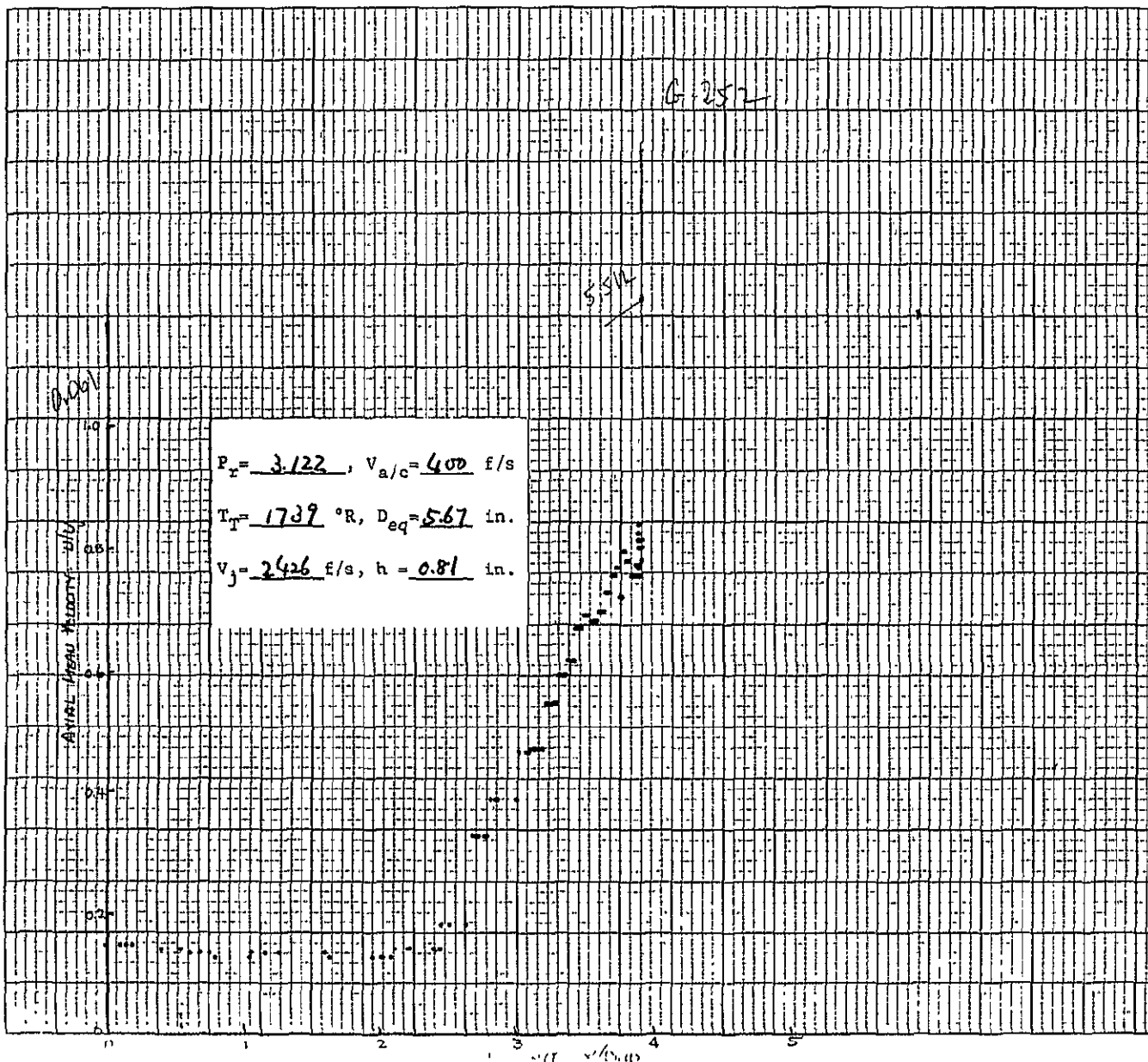
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 44
PLOT IDENTIFICATION: G - 251	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 222 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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NO 1011 AX ON

1043

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AERONAUTICAL ENGINEERING
RESEARCH DIVISION
BUFFALO, NEW YORK



$P_r = 3.122$, $V_{a/c} = 400$ f/s

$T_r = 1739$ °R, $D_{eq} = 5.67$ in.

$V_j = 2426$ f/s, $h = 0.81$ in.

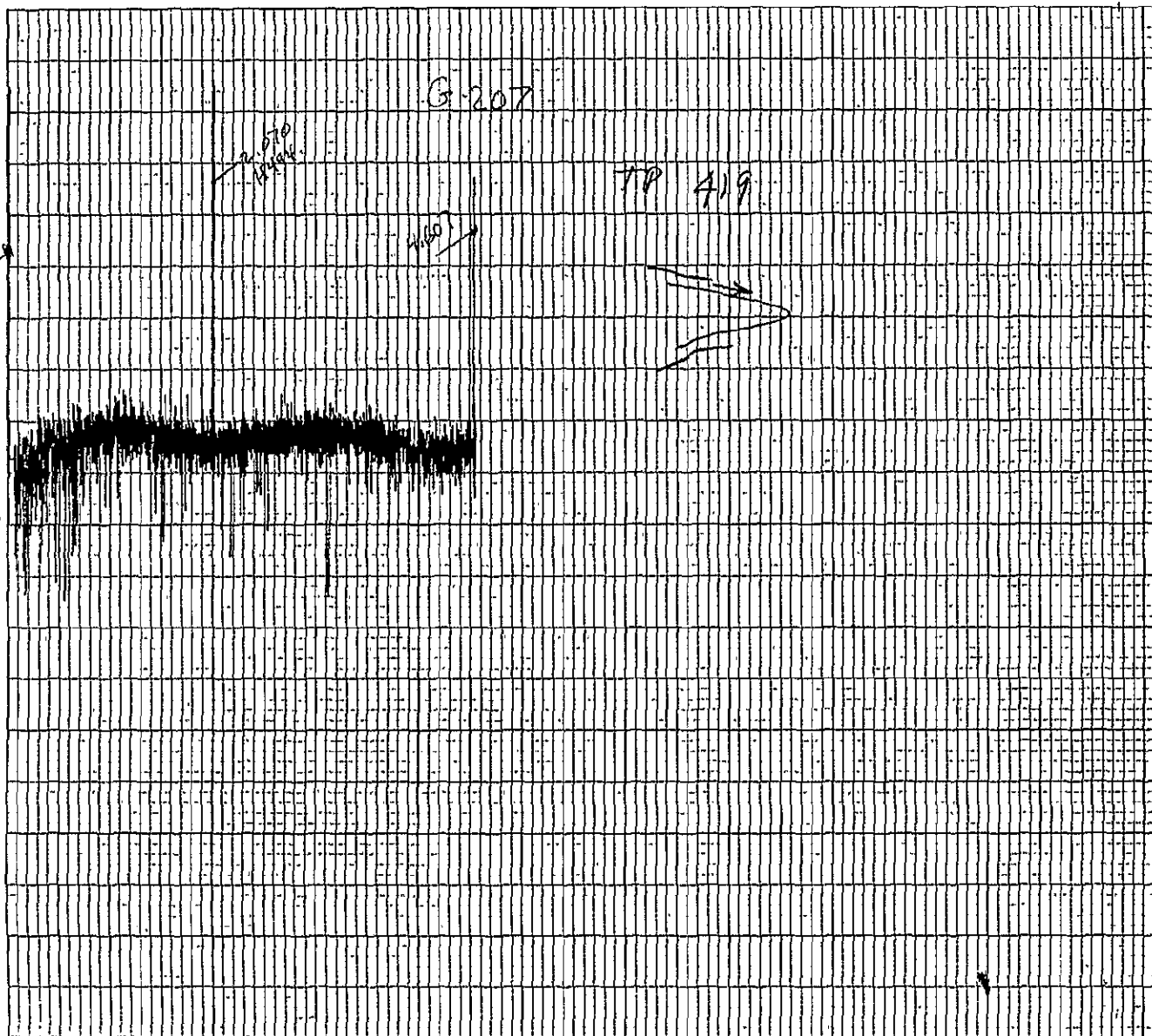
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 44
PLOT IDENTIFICATION: G - 252	
TRAVERSE DETAILS:	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_2	
LOCATIONS: TRAVERSE -	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X_{eq}	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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MO. XY 1101

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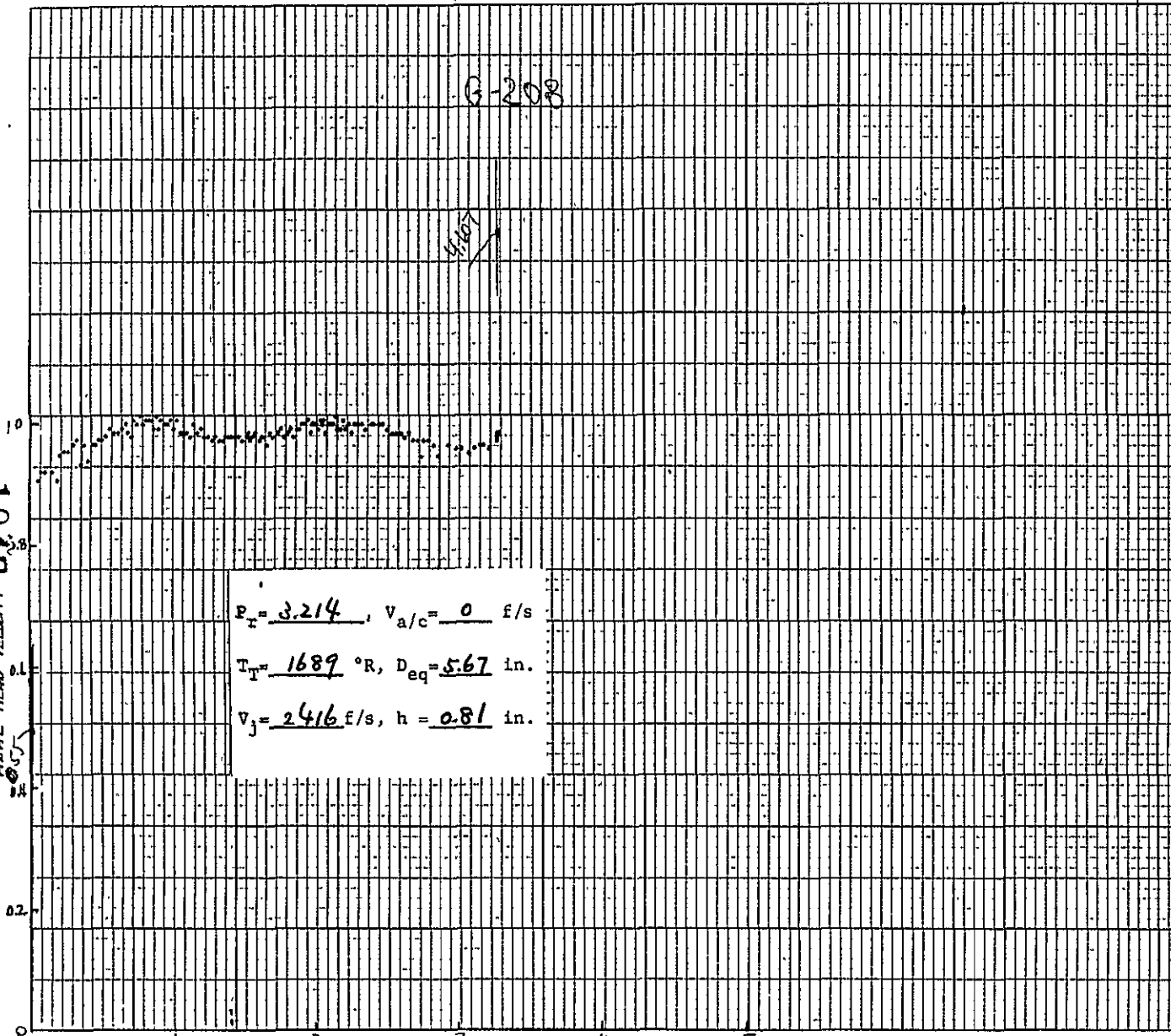


DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 419	
PLOT IDENTIFICATION: G - 207	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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OF POOR QUALITY

10.0

AXIAL HEAD VELOCITY
= 0.5



$P_r = 3.214$, $V_{a/c} = 0$ f/s
 $T_T = 1689$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2416$ f/s, $h = 0.81$ in.

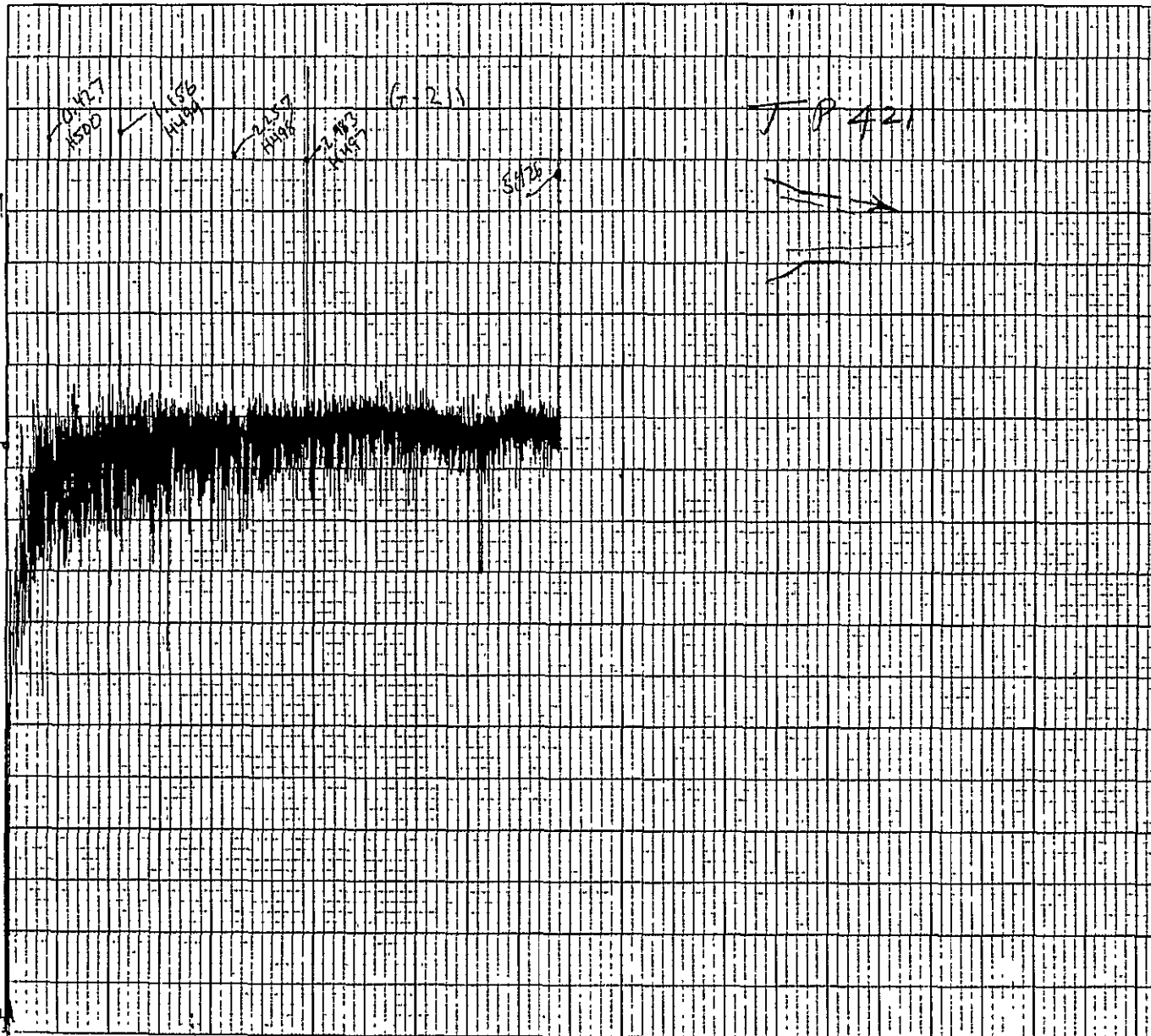
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 419
PLOT IDENTIFICATION: G - 208	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

Model 4
Test Point 421

No. XY 1101

1048

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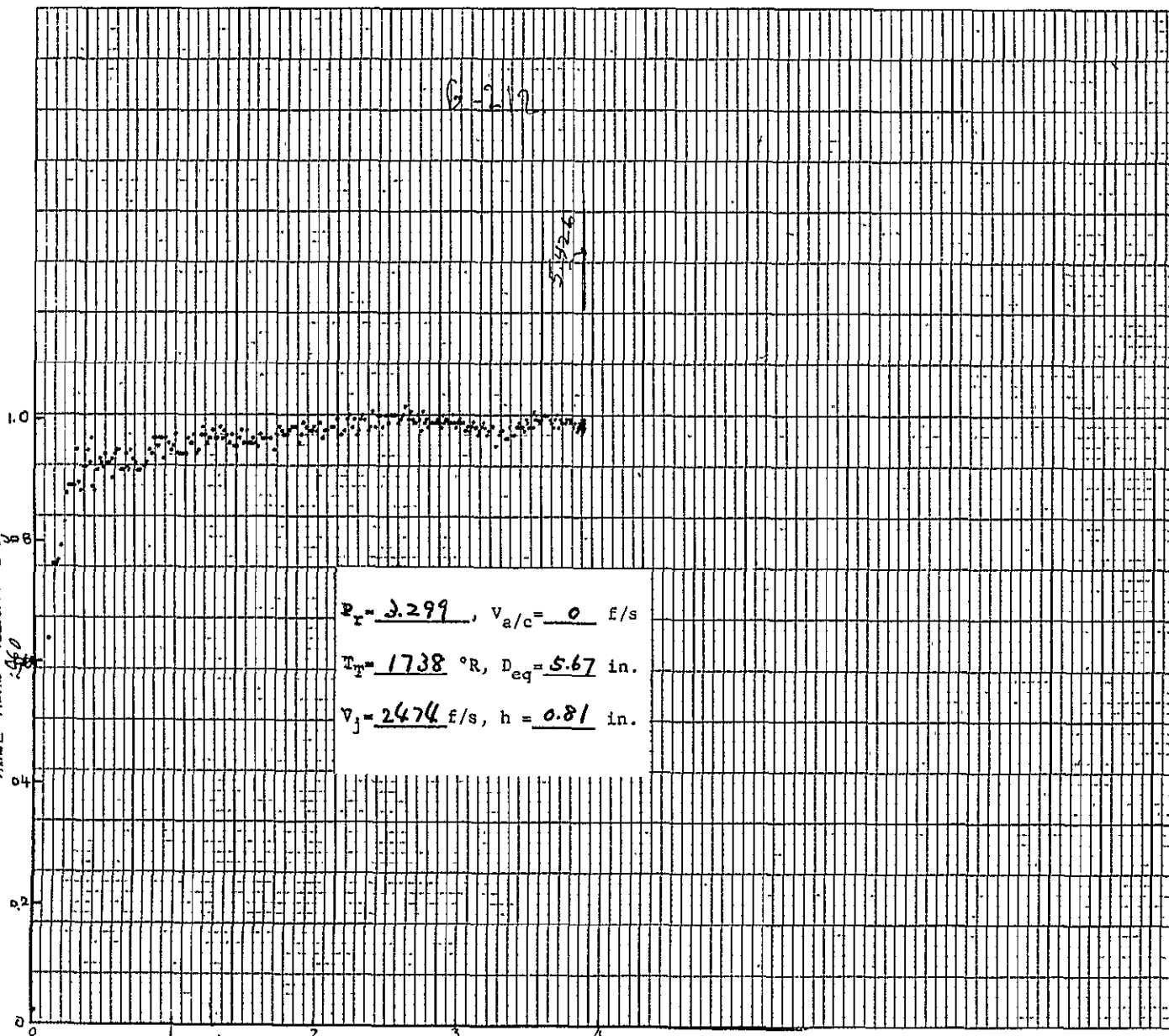


DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 421
PLOT IDENTIFICATION: G - 211	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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6701

AXIAL HEAD VELOCITY

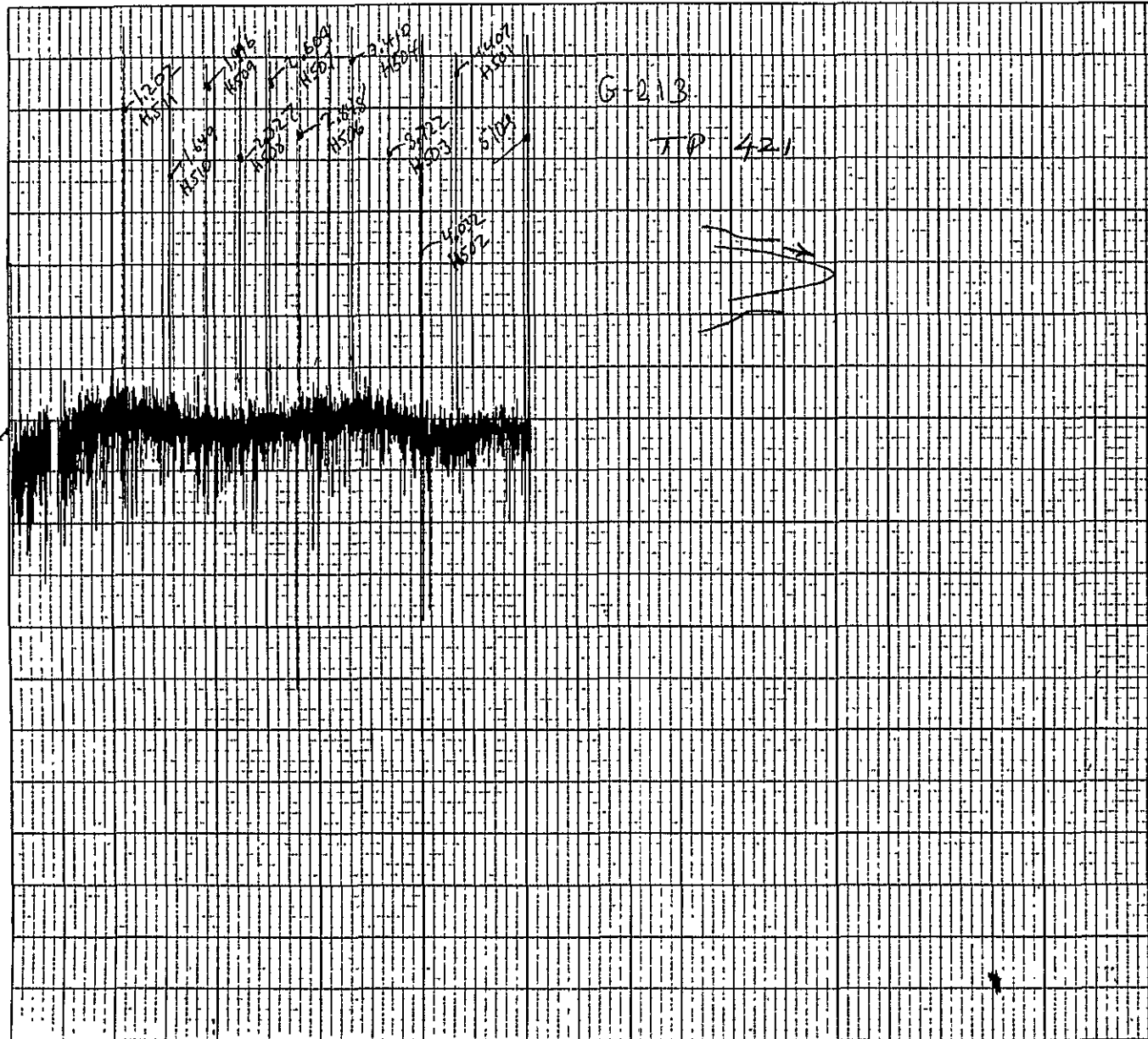


$$v_r = 3.299, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 1738^\circ \text{R}, D_{eq} = 5.67 \text{ in.}$$

$$v_j = 2474 \text{ f/s}, h = 0.81 \text{ in.}$$

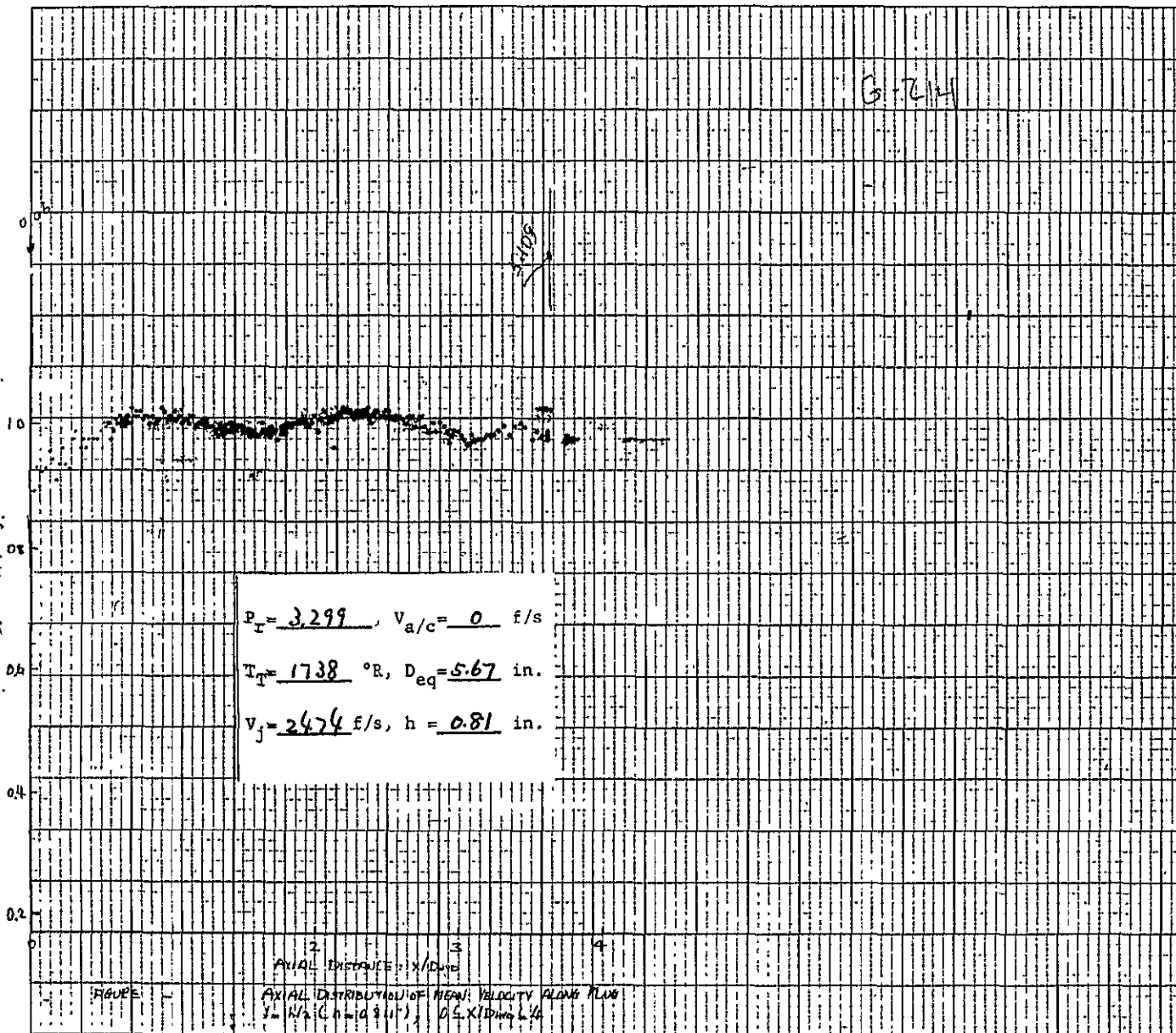
DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 421
PLOT IDENTIFICATION: G - 212	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 421
PLOT IDENTIFICATION: G - 213	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- 50/ TO H- 51/	

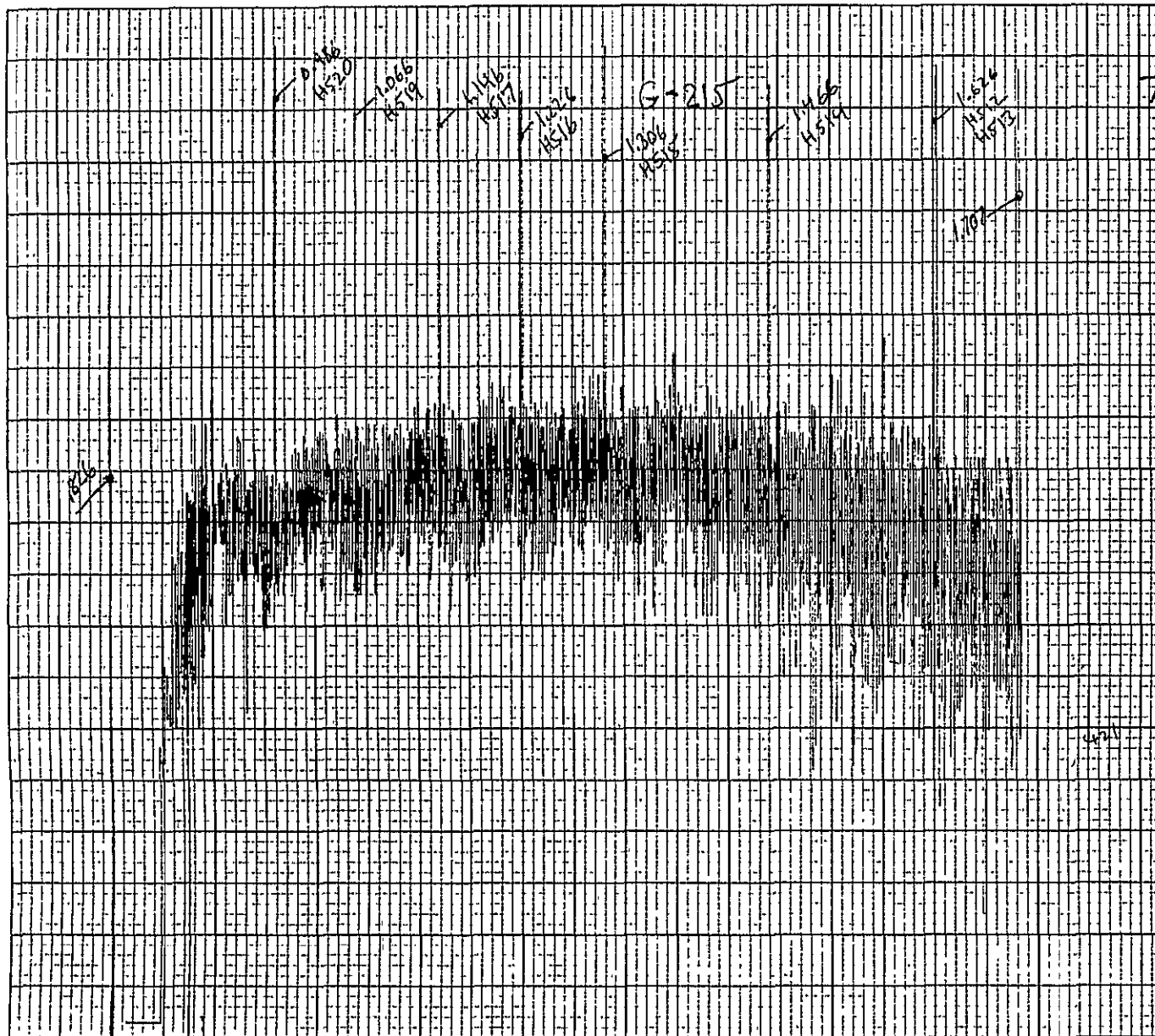
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150 ft/s

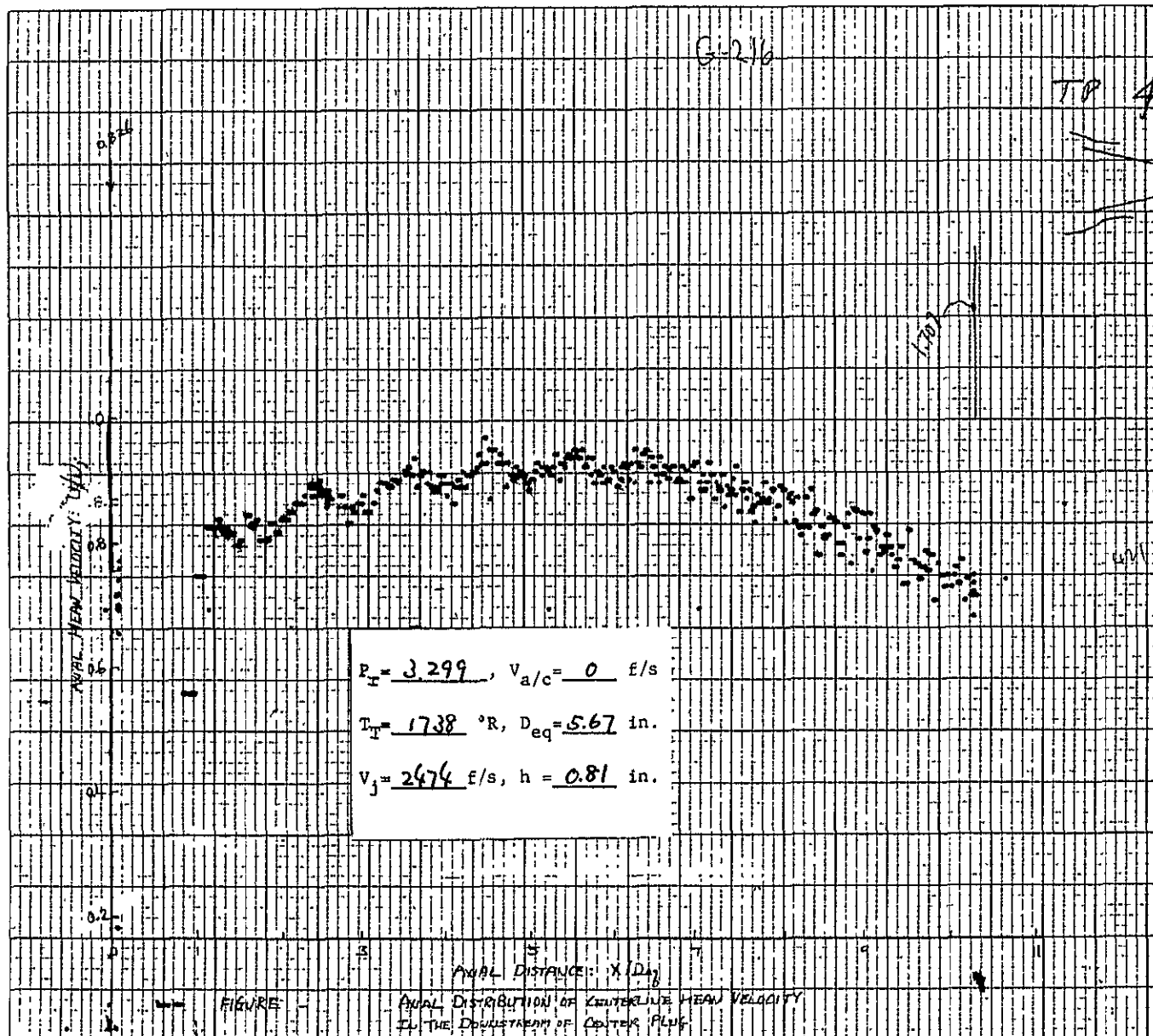


DATE: 10/22/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 421	
PLOT IDENTIFICATION: G - 214	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>)-	VOLTS) $R =$
LOCATIONS TRAVERSE -	VOLTS) $R_2 =$
RADIAL <input type="checkbox"/> ; E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (<input type="checkbox"/>)-	VOLTS) $X =$
LOCATIONS TRAVERSE -	VOLTS) $D_{eq} =$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 413 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

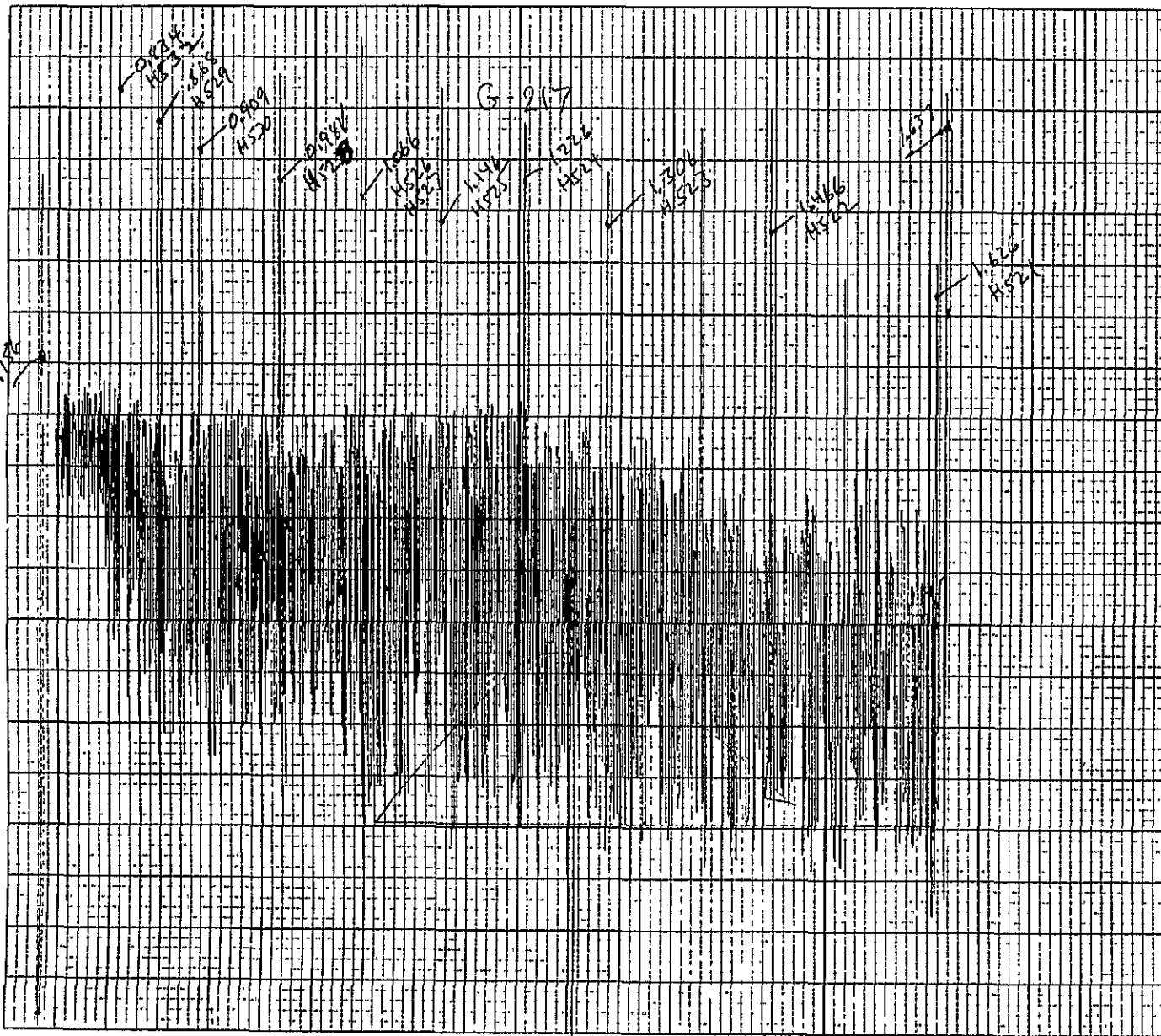
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DATE: 10/26/81	NOZZLE: # 4
TEST POINT: L.V. - ; ACOUSTIC - 421	
PLOT IDENTIFICATION: G - 215	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_1 = 0$
LOCATIONS: TRAVERSE -	VOLTS $R_2 = 0$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X =$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 4.07 F.P.S./UNIT	
HISTOGRAMS: H- 512 TO H- 520	

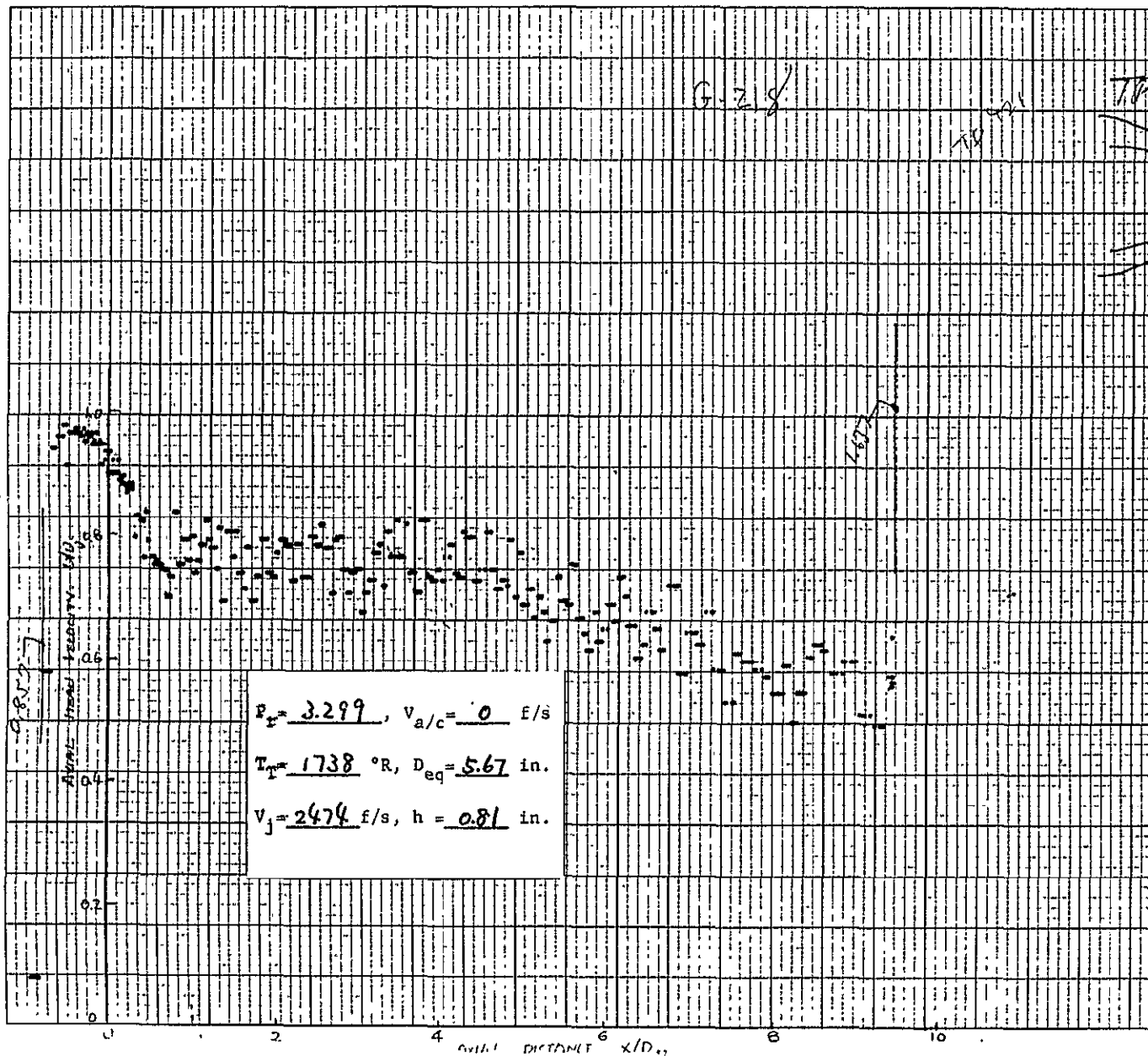


DATE: 10/26/81		NOZZLE: #4	
TEST POINT: L.V. -		ACOUSTIC - 421	
PLOT IDENTIFICATION: G - 216			
TRAVERSE DETAILS.			
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>			
RADIAL, REF. (ϕ) -		VOLTS $R_2 = 0$	
LOCATIONS: TRAVERSE -		VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>			
AXIAL, REF. () -		VOLTS X_{eq}	
LOCATIONS: TRAVERSE -		VOLTS D_{eq}	
SCALE : X-AXIS= 7.08 INCH/UNIT			
Y-AXIS= 407 F.P.S./UNIT			
HISTOGRAMS: H- TO H-			
<p style="text-align: center;">LINE AT W TRAVERSE</p>			



DATE: 10/26/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 421
PLOT IDENTIFICATION: G-217	
TRAVERSE DETAILS.	
AXIAL: <input checked="" type="checkbox"/> ; OFFSET: <input type="checkbox"/>	
RADIAL: REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL: <input type="checkbox"/> ; E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL: REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 27.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H-521 TO H-532	

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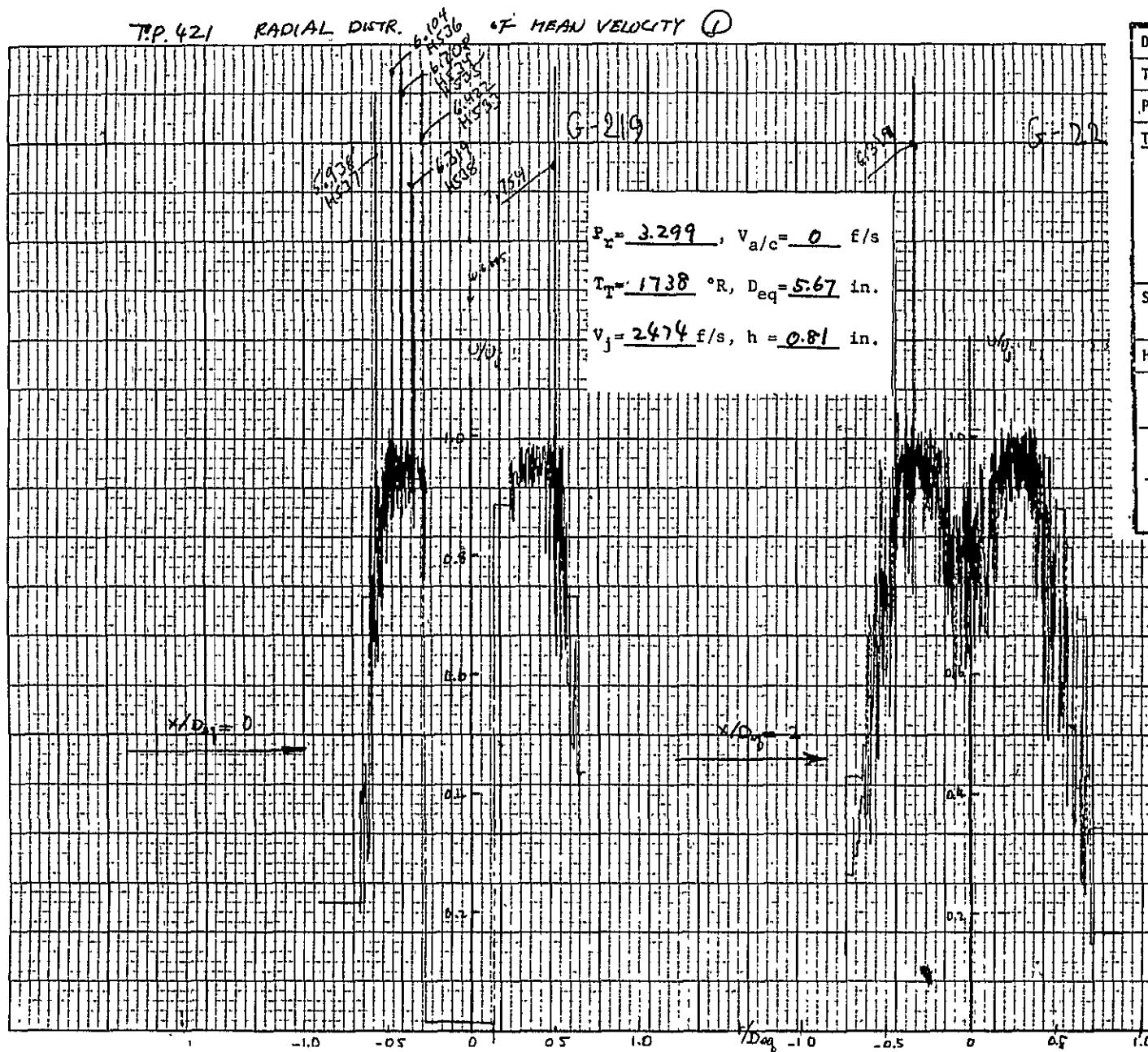
$P_r = 3.299$, $V_{a/c} = 0$ f/s

$T_r = 1738$ °R, $D_{eq} = 5.67$ in.

$V_j = 2474$ f/s, $h = 0.81$ in.

DATE: 10/26/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 42/	
PLOT IDENTIFICATION: G - 218	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 10/26/81 NOZZLE: # 4

TEST POINT: L.V. - ; ACOUSTIC - 421

PLOT IDENTIFICATION: G-219 / 220

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS X_D

LOCATIONS TRAVERSE - VOLTS eq

SCALE: X-AXIS= 3.32 INCH/UNIT

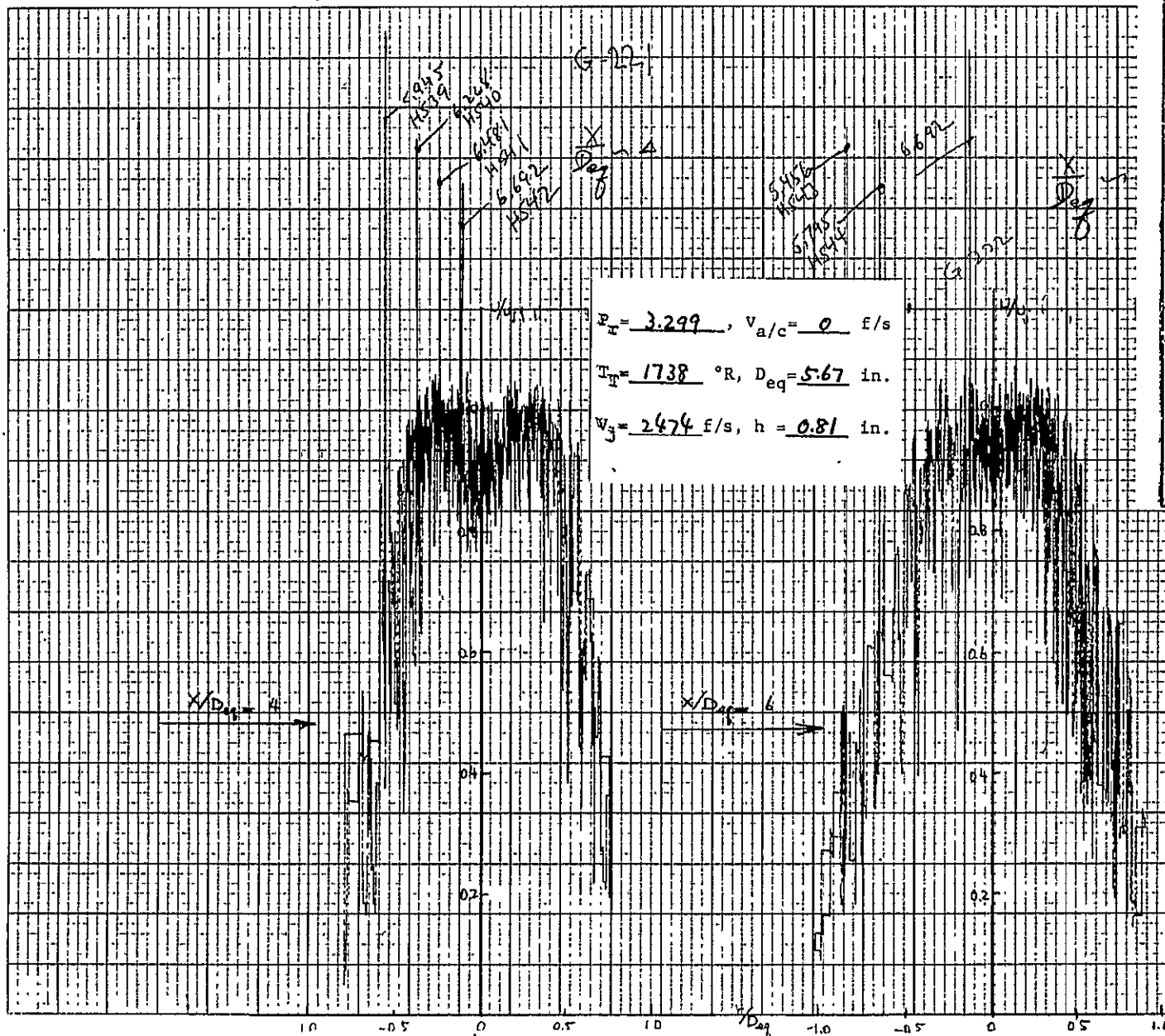
Y-AXIS= 407 F.P.S./UNIT

HISTOGRAMS: H- 533 TO H- 538

Diagram illustrating the location of 12 traverses, showing a vertical line labeled G-219 and G-220, and a horizontal line labeled LINE OF 12 TRAVERSES.

T.P. 421 RADIAL DISTR. OF MEAN VELOCITY (2)

DATE: 10/26/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 421
PLOT IDENTIFICATION: G-221/222	
TRAVERSE DETAILS.	
AXIAL: <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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T.P. 421 RADIAL DISTR. OF MEAN VELOCITY

G-223

DATE: 10/26/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 421	
PLOT IDENTIFICATION: G-223/224	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_2	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X_{eq}	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H-545 TO H-549	

$P_z = 3.299$, $V_{a/c} = 0$ F/s

$T_T = 1738$ °R, $D_{eq} = 5.67$ in.

$V_j = 2674$ F/s, $h = 0.81$ in.

$X/D_{eq} = 0$

$X/D_{eq} = 1.0$

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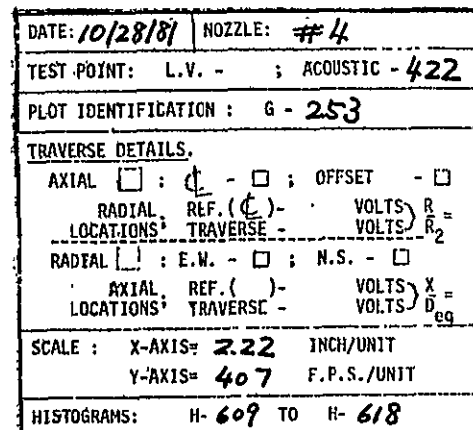
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Model 4
Test Point 422

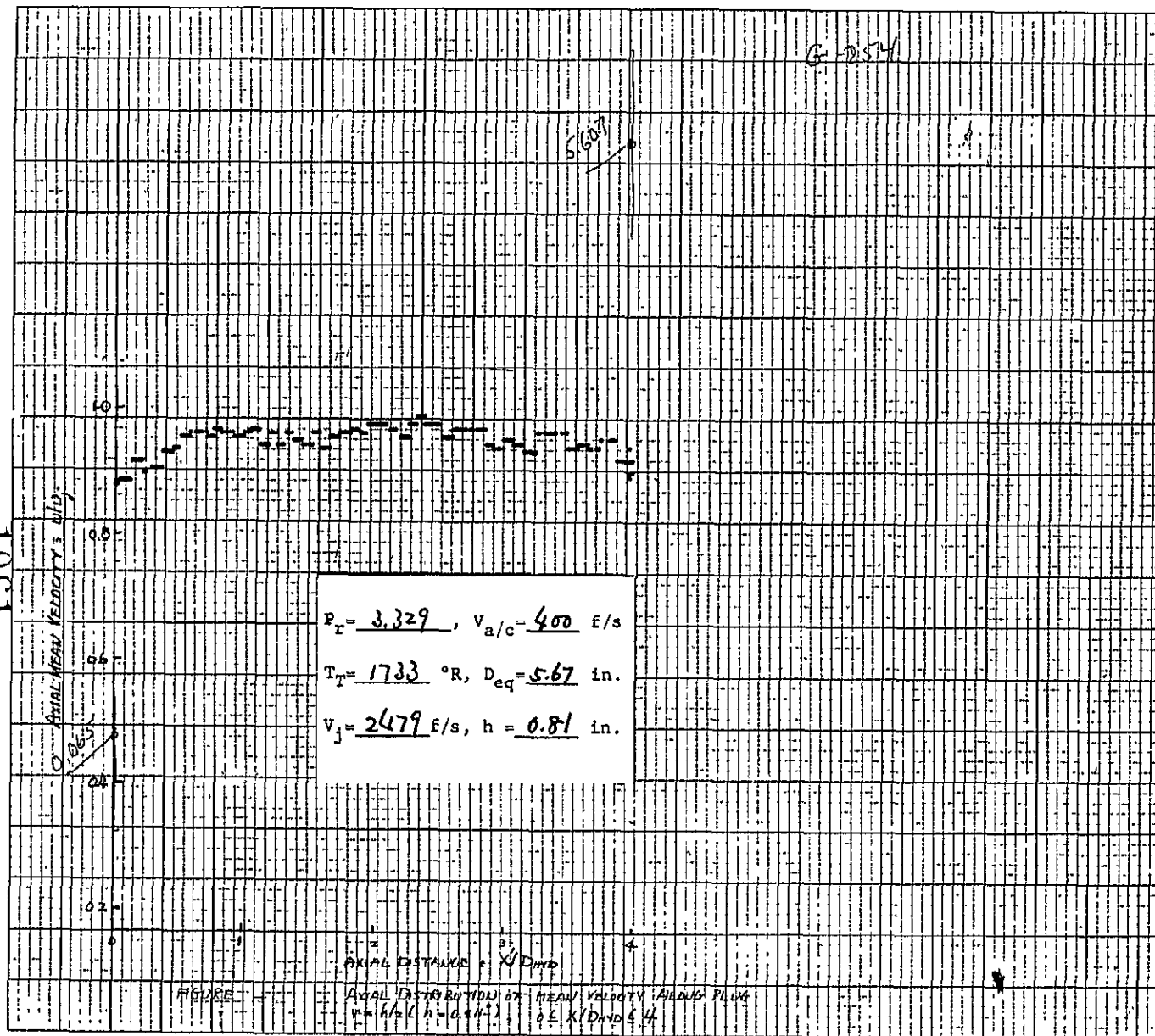
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1061



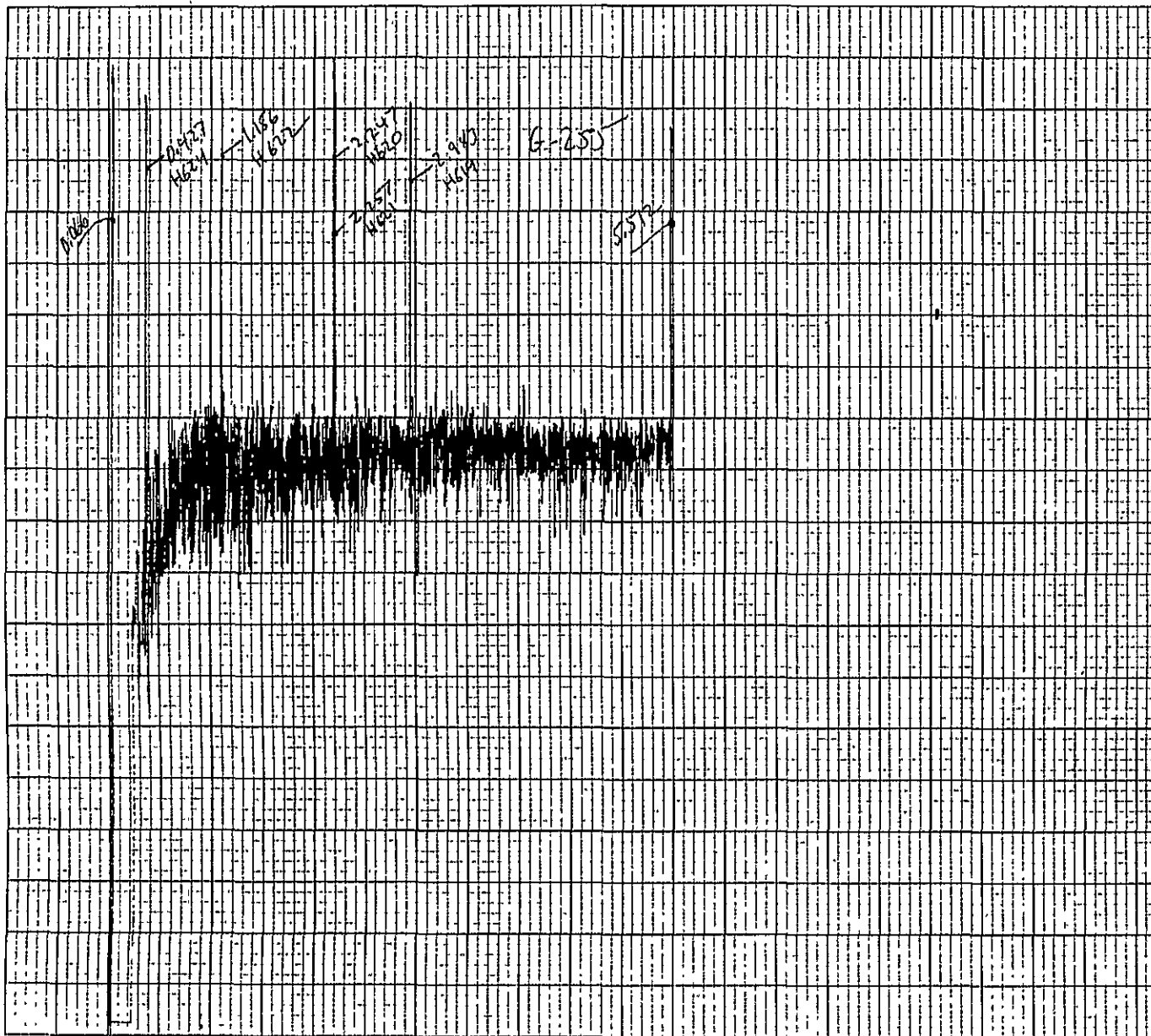
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 254	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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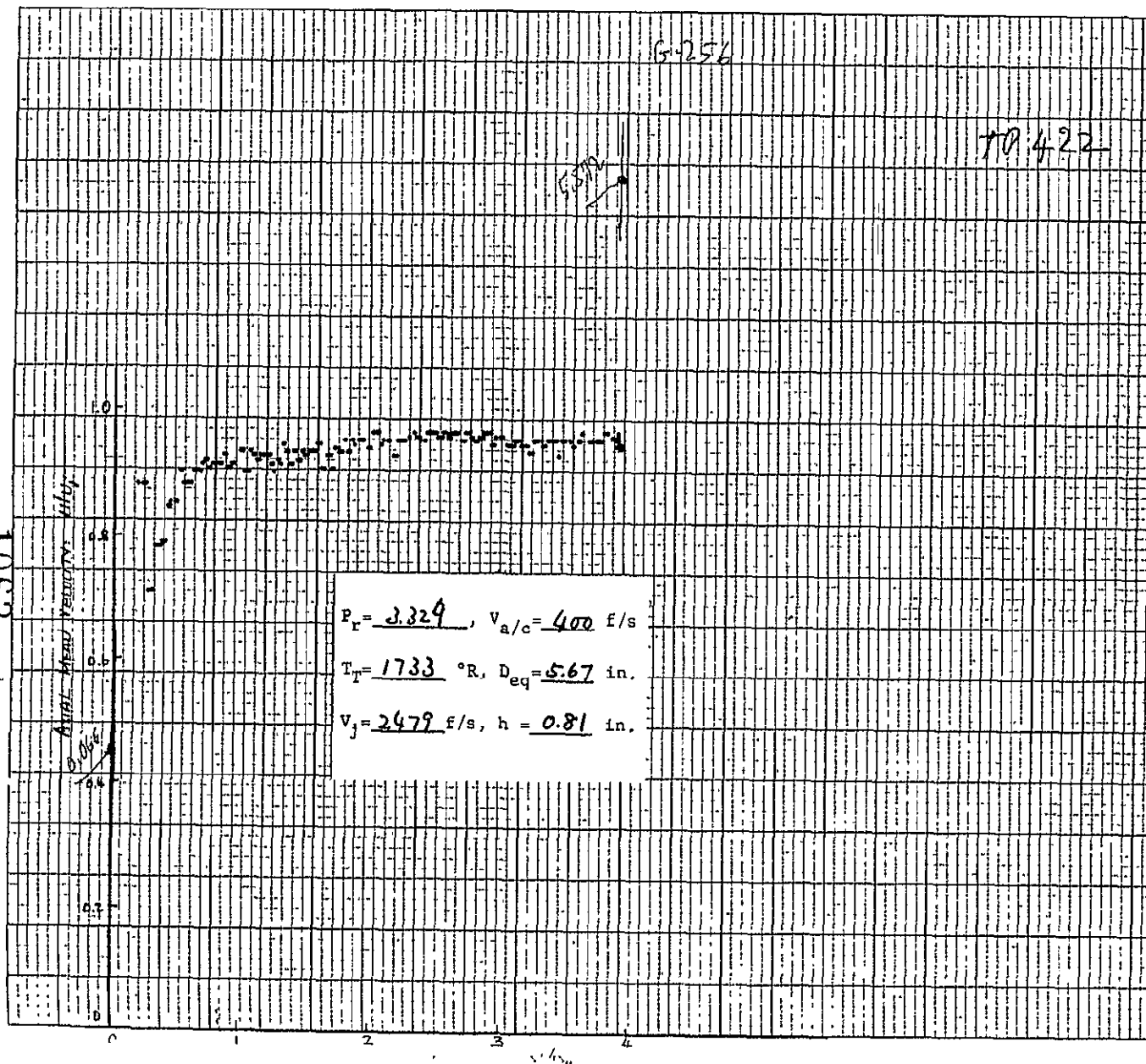
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
SERIAL NO. 1062



DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 422	
PLOT IDENTIFICATION: G - 255	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS R_2
LOCATIONS, TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS X_D
LOCATIONS, TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 407 F.P.S./UNIT	
HISTOGRAMS: H- 619 TO H- 624	

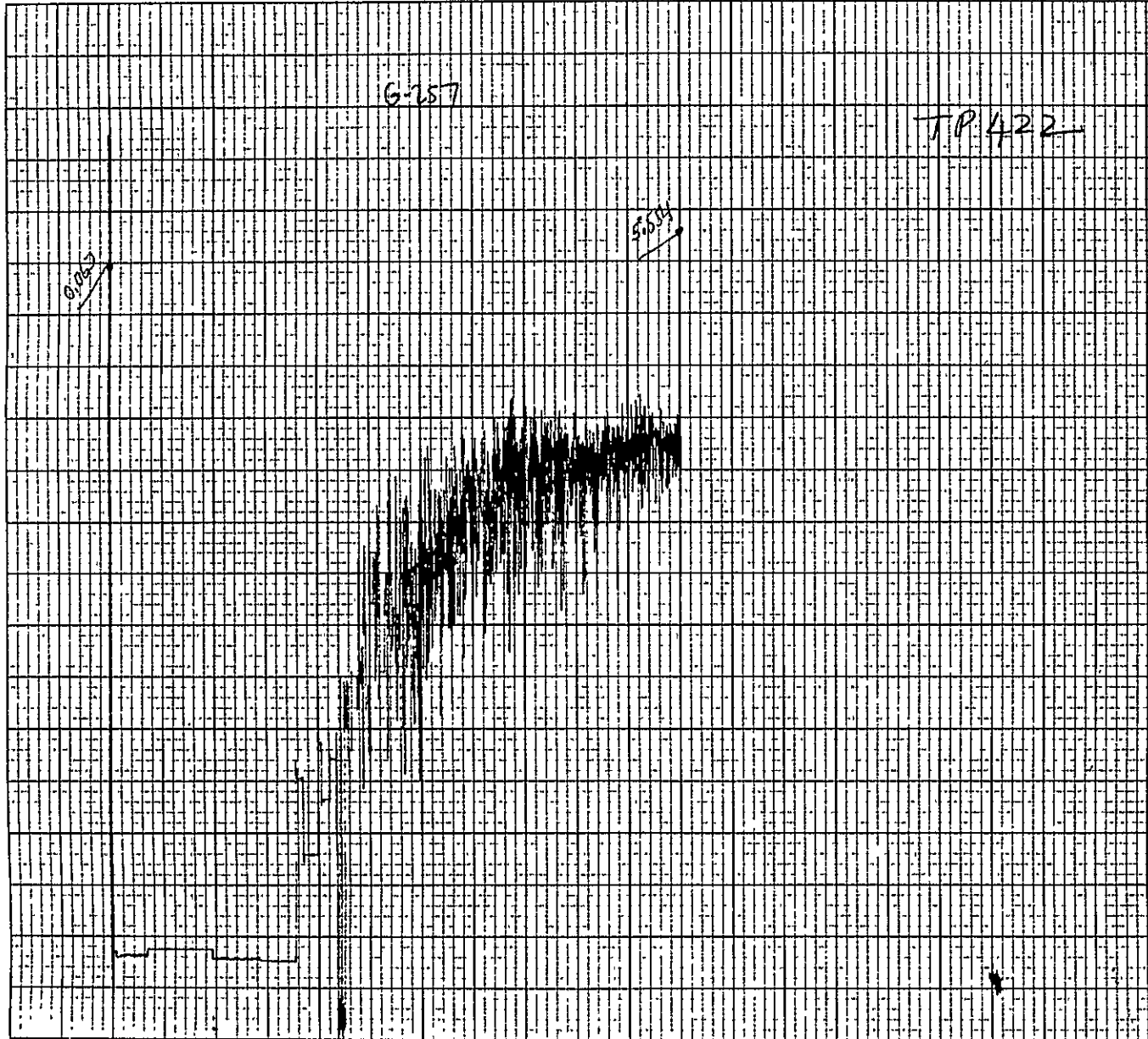
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1063

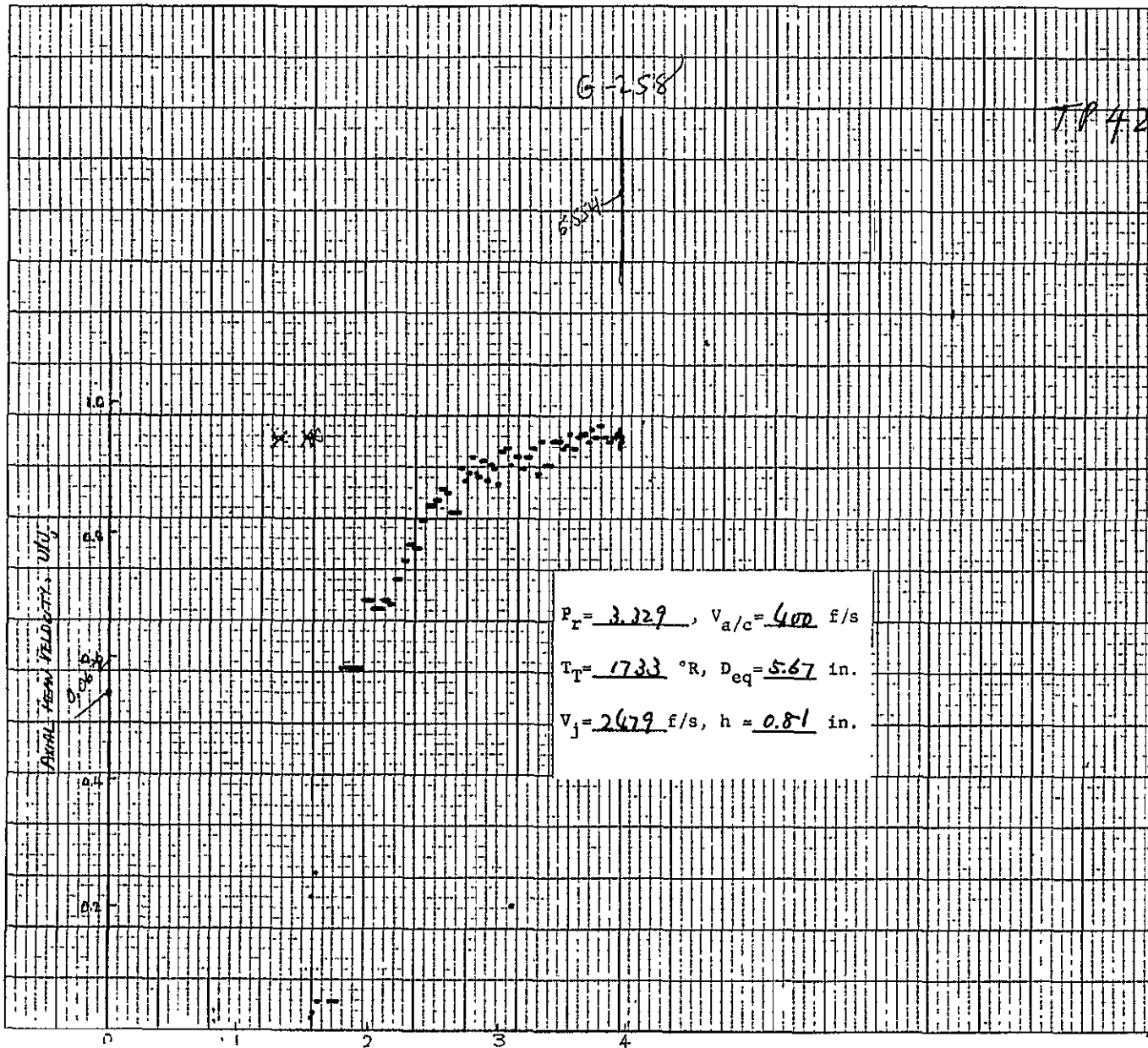


DATE: 10/28/81	NOZZLE: # 4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 256	
TRAVERSE DETAILS:	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS Y	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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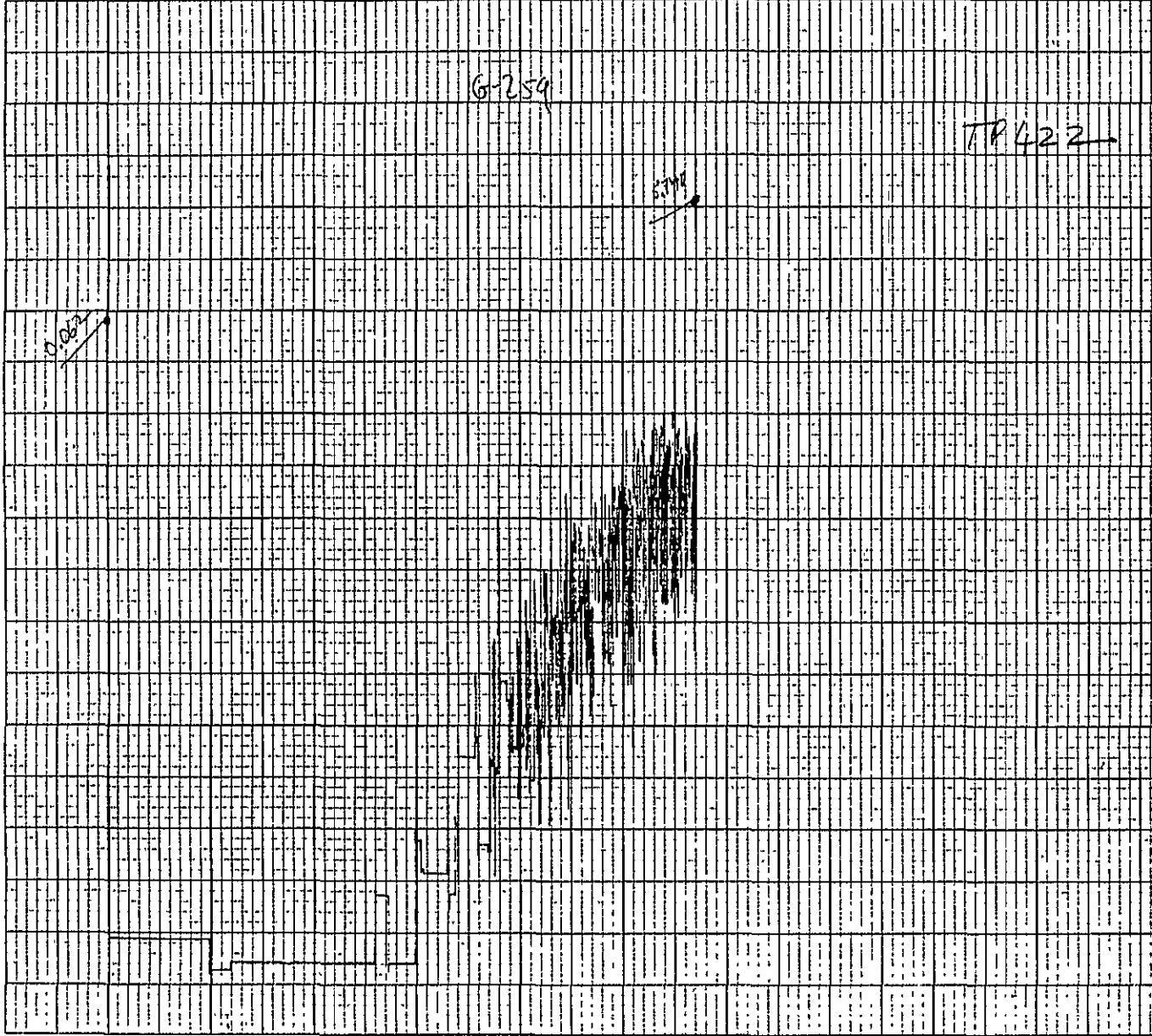


DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 422	
PLOT IDENTIFICATION: G - 257	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS R_1
LOCATIONS, TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. (ϕ) -	VOLTS X
LOCATIONS, TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



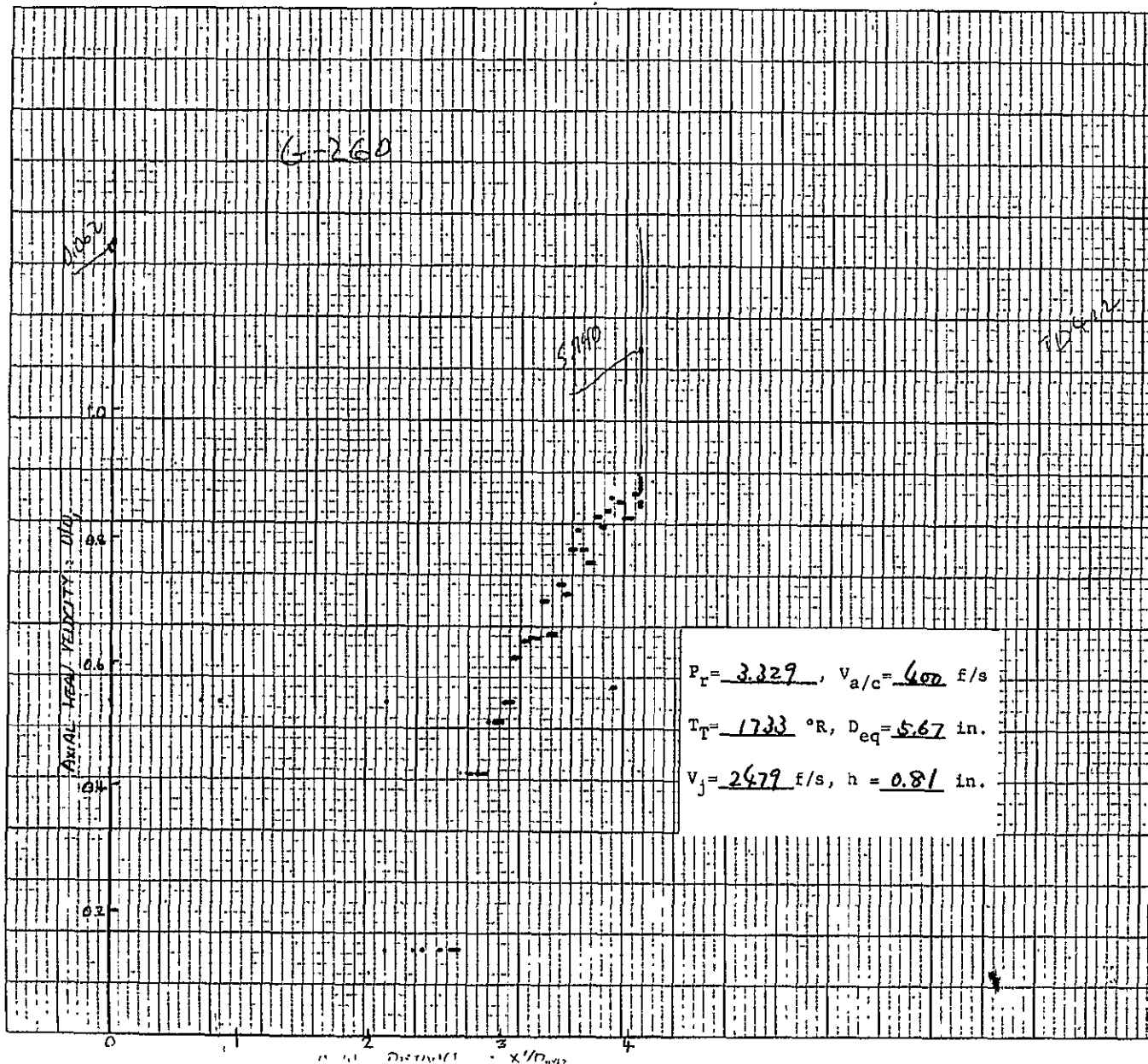
DATE: 10/28/81		NOZZLE: #4	
TEST POINT: L.V. -		ACOUSTIC - 422	
PLOT IDENTIFICATION: G - 258			
TRAVERSE DETAILS.			
AXIAL <input type="checkbox"/>	REF. () -	VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/>	TRaverse -	VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/>	E.W. - <input type="checkbox"/>	N.S. - <input type="checkbox"/>	
AXIAL <input type="checkbox"/>	REF. () -	VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS	TRaverse -	VOLTS $\frac{D}{D_{eq}}$	
SCALE: X-AXIS= 2.22 INCH/UNIT		Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-			

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DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 422	
PLOT IDENTIFICATION: G - 259	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1067



$$P_r = 3.329, \quad v_{a/c} = 400 \text{ f/s}$$

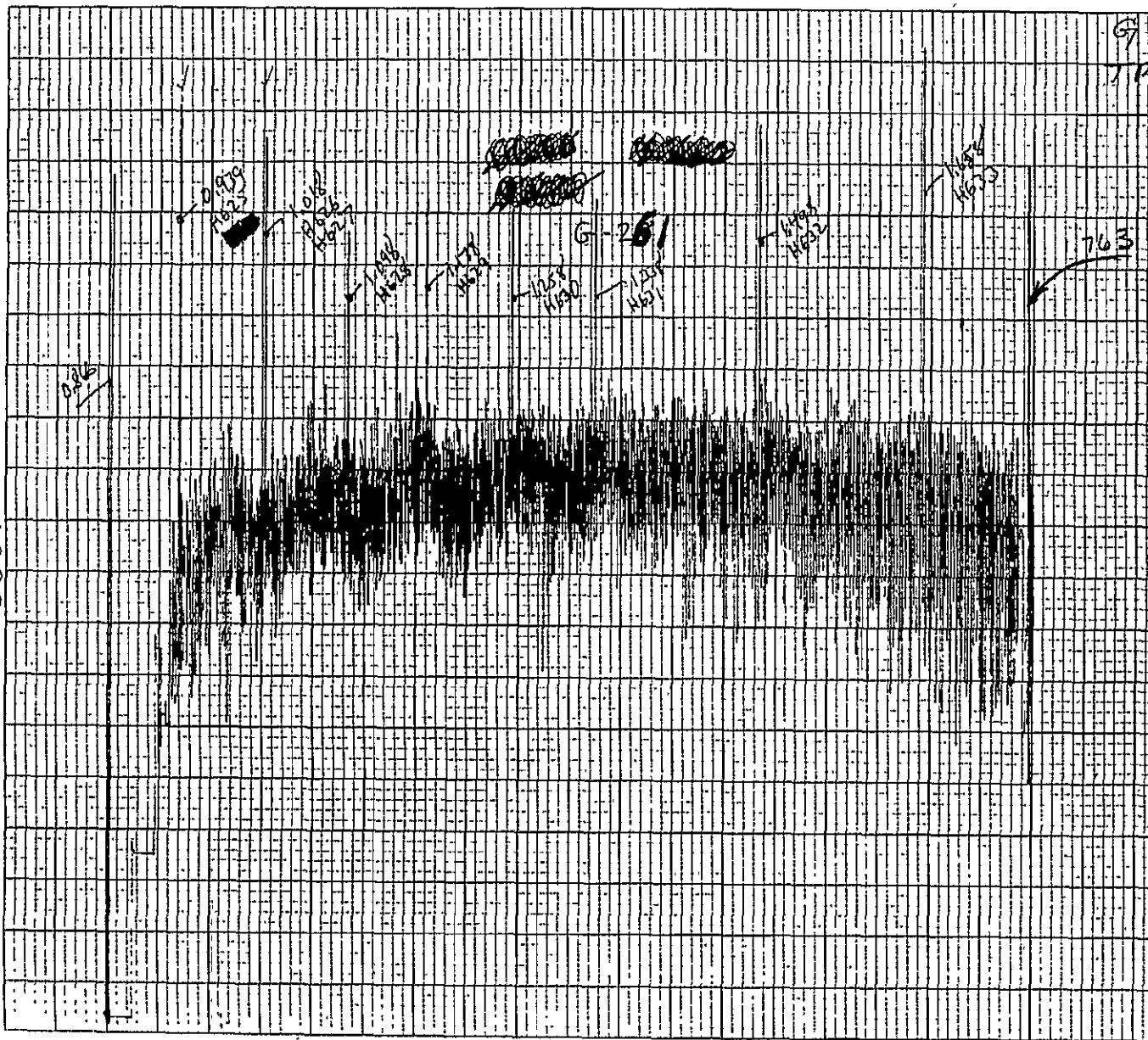
$$T_r = 1733 \text{ } ^\circ\text{R}, \quad D_{eq} = 5.67 \text{ in.}$$

$$v_j = 2479 \text{ f/s}, \quad h = 0.81 \text{ in.}$$

DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 260	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

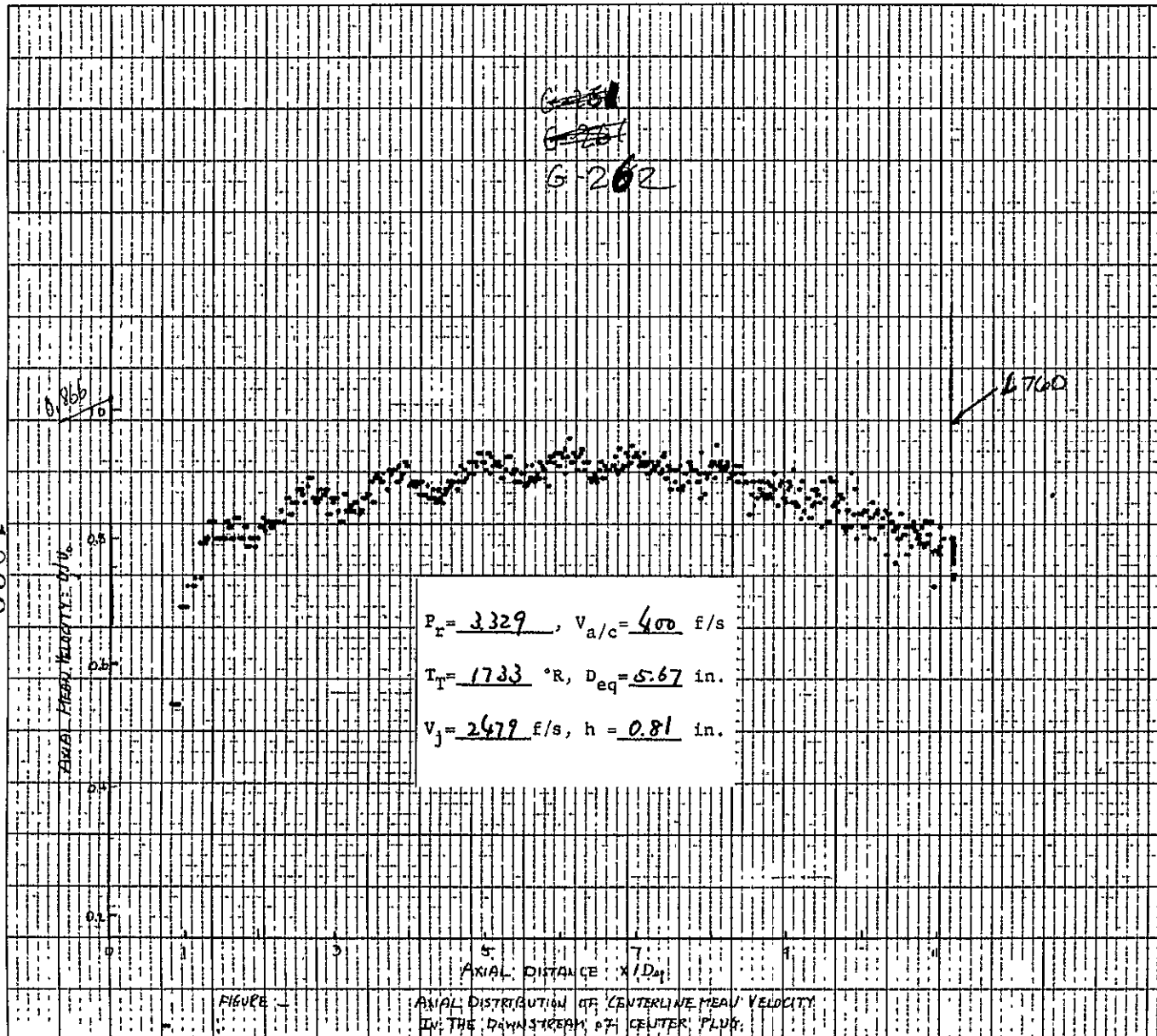
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1063



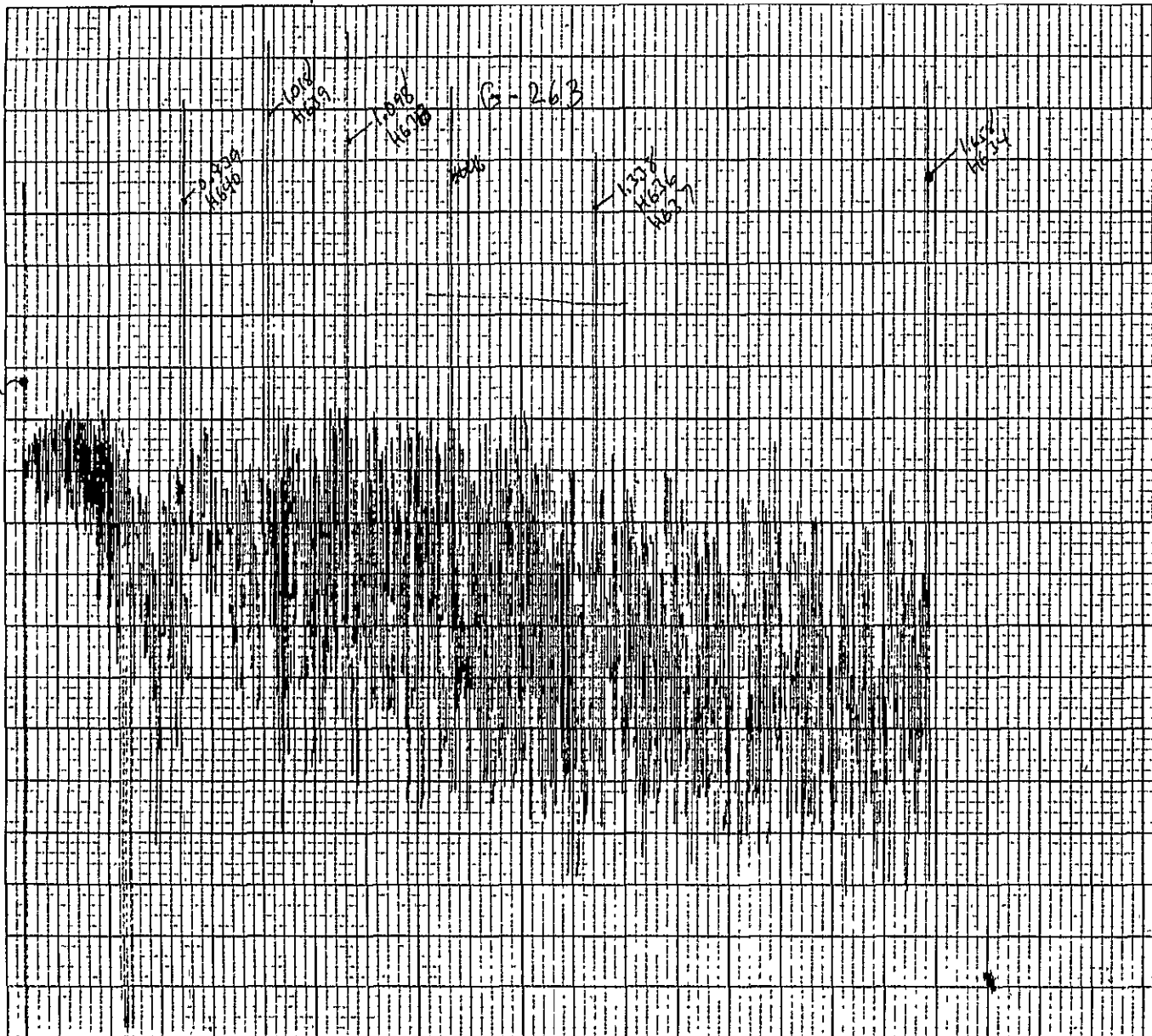
DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. - ; ACOUSTIC - 422	
PLOT IDENTIFICATION: G-261	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> ; REF. (C) - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	RADIAL <input type="checkbox"/> ; REF. (C) - <input type="checkbox"/> ; VOLTS R_1 = 0
LOCATIONS: TRAVERSE -	VOLTS R_2 =
RADIAL <input type="checkbox"/> ; E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	AXIAL <input type="checkbox"/> ; REF. (C) - <input type="checkbox"/> ; VOLTS X =
LOCATIONS: TRAVERSE -	VOLTS D_{eq} =
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H-625 TO H-633	

1069



DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 262	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> ; OFFSET <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 708 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 263	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- 634 TO H- 640	



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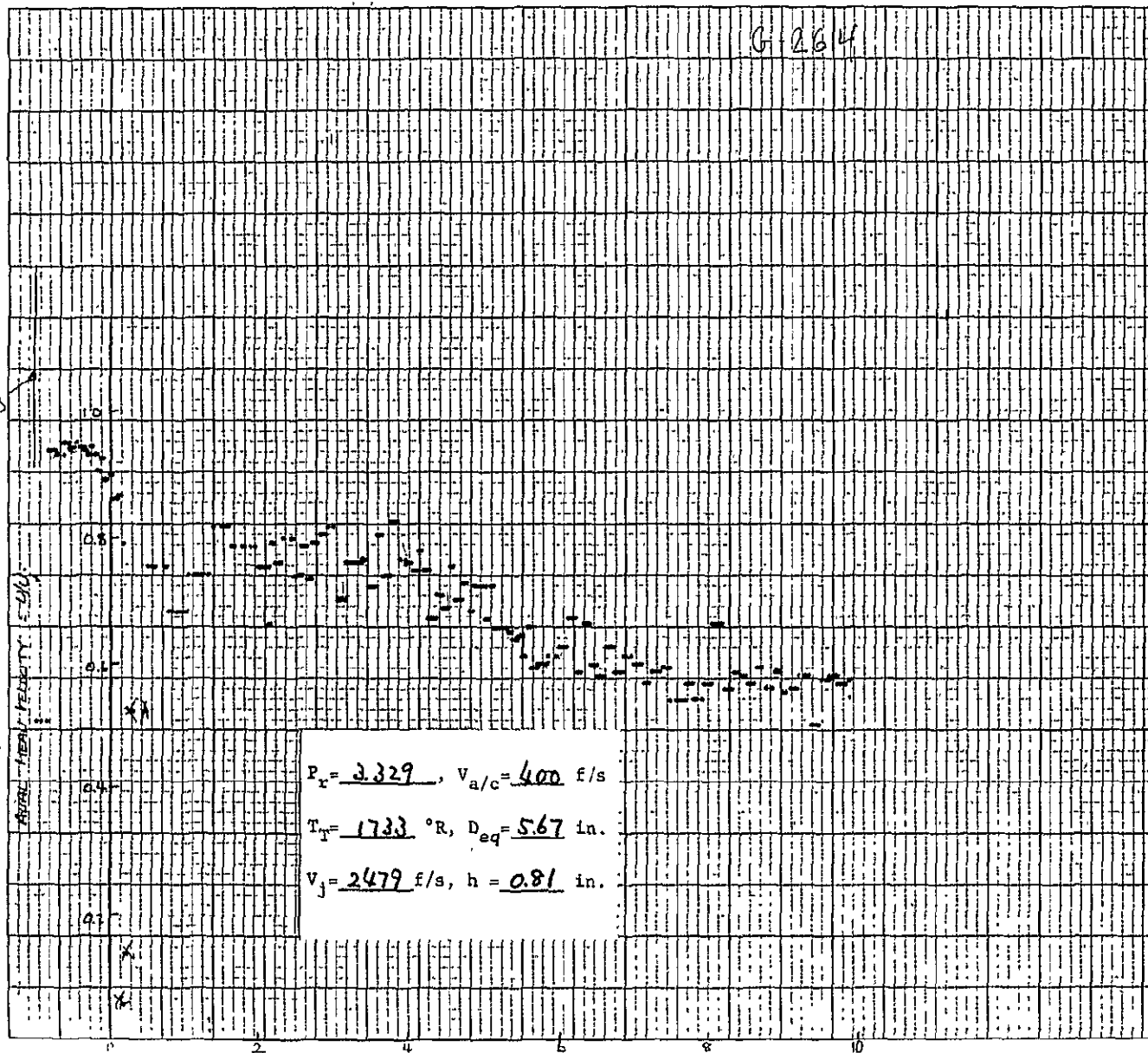
1070

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BAPTIST, NEW YORK
SERIALS MICROFILM

NO 1101 X

1071

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GRAPHIC CONTROLS CORP.
BUFFALO, NEW YORK
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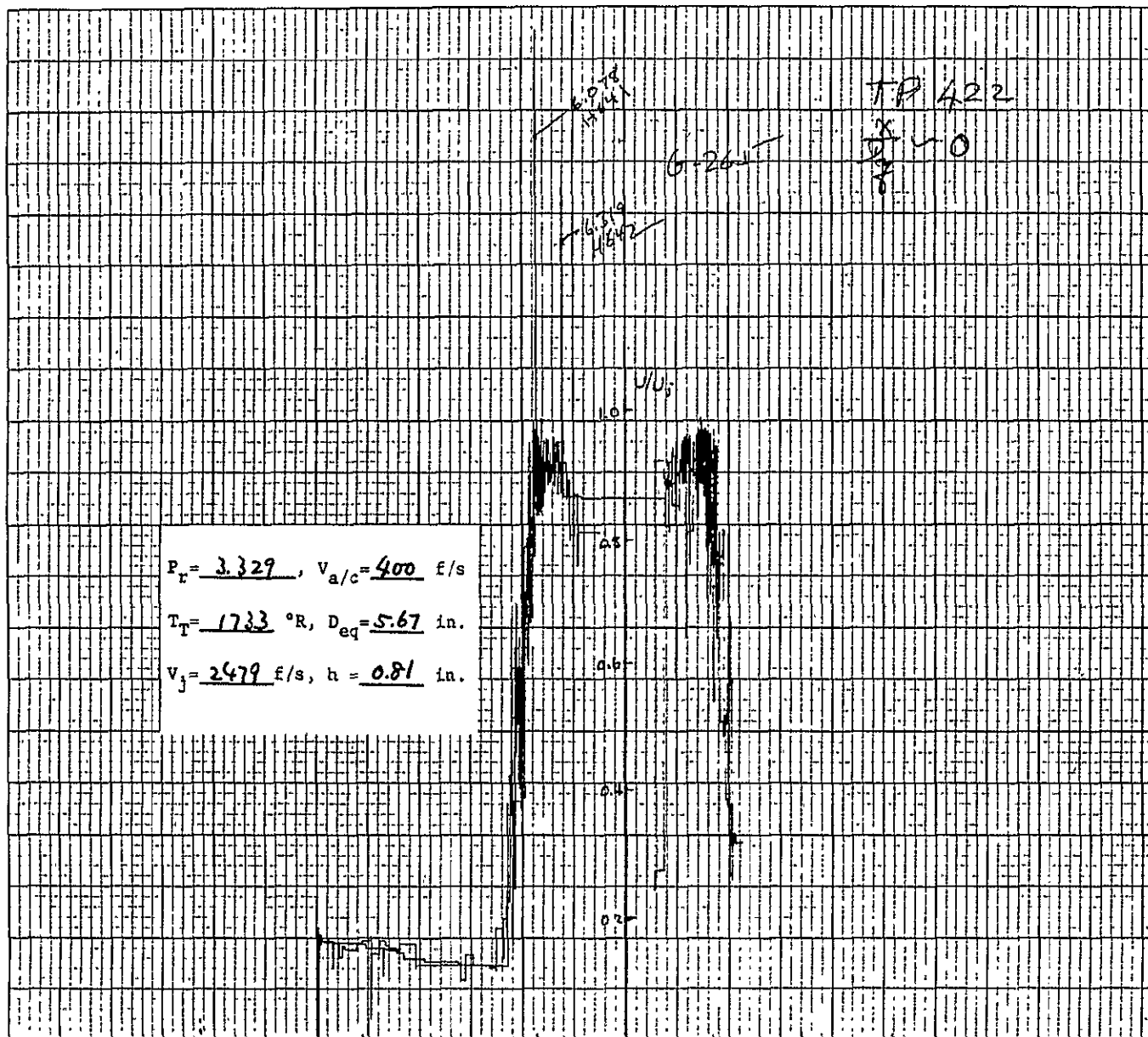
$P_r = 3.329$, $V_{a/c} = 400$ f/s

$T_r = 1733$ °R, $D_{eq} = 5.67$ in.

$V_j = 2479$ f/s, $h = 0.81$ in.

DATE: 10/18/91	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 264	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS X_{eq}
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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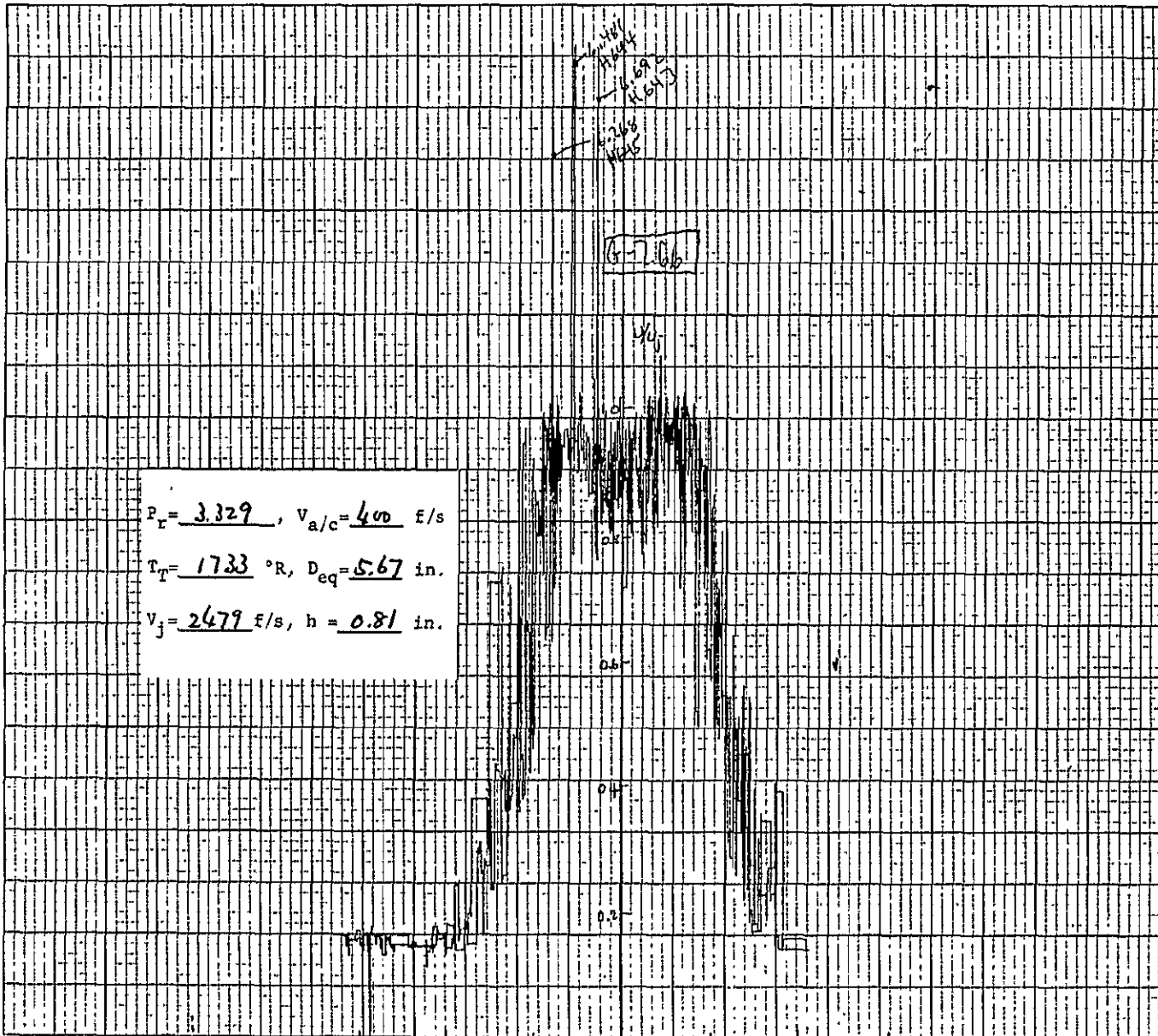


$$P_r = 3.329, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 1733^\circ R, D_{eq} = 5.67 \text{ in.}$$

$$V_j = 2479 \text{ f/s, } h = 0.81 \text{ in.}$$

DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G-265	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H- 641 TO H- 642	



$$P_r = 3.329, v_{a/c} = 400 \text{ f/s}$$

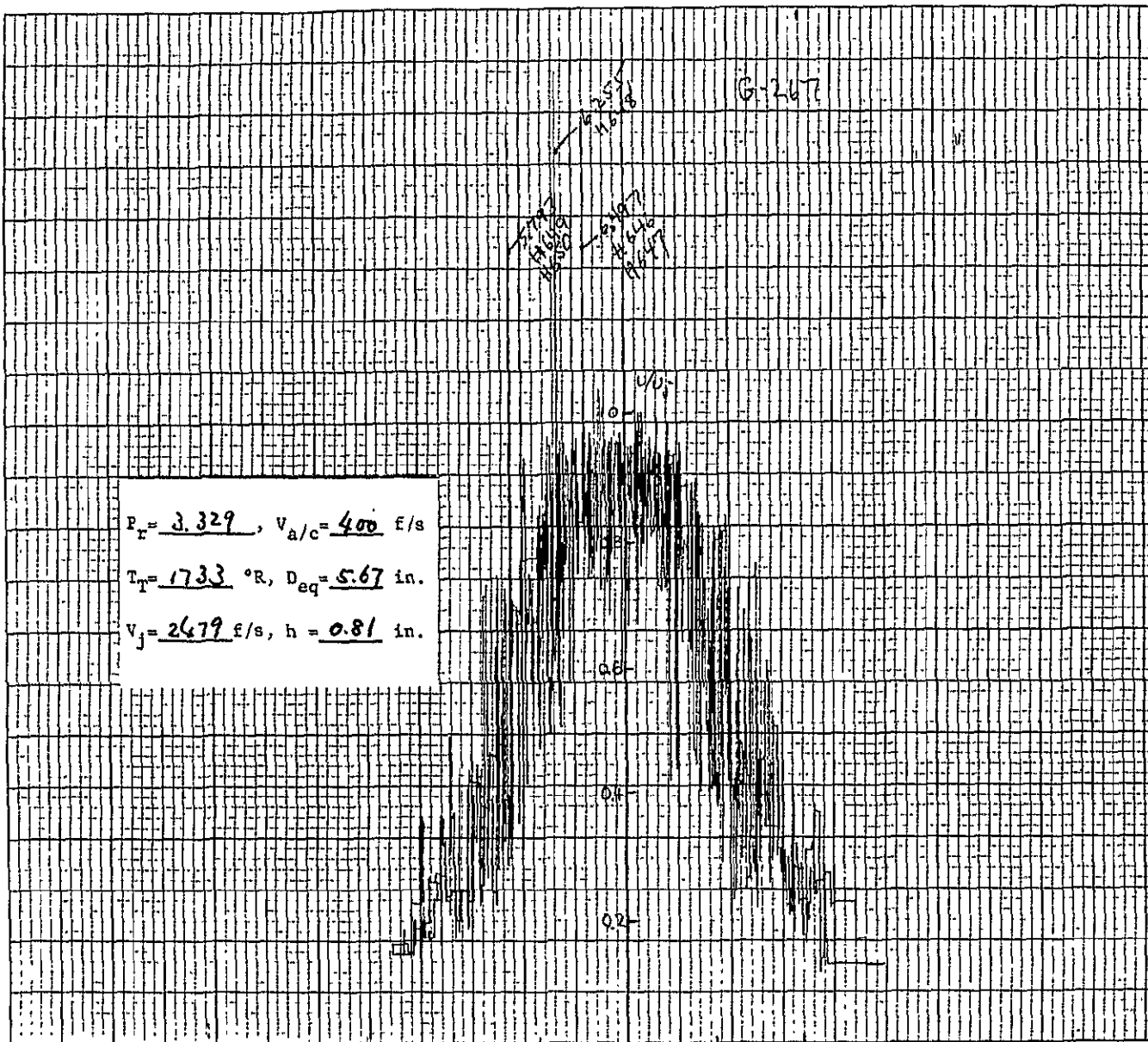
$$T_r = 1733^\circ \text{R}, D_{eq} = 5.67 \text{ in.}$$

$$V_j = 2479 \text{ f/s}, h = 0.81 \text{ in.}$$

DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 266	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 407 F.P.S./UNIT	
HISTOGRAMS: H- 643 TO H- 645	

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$P_r = 3.329$, $V_{a/c} = 400$ E/s
 $T_r = 1733$ °R, $D_{eq} = 5.67$ in.
 $V_j = 2679$ E/s, $h = 0.81$ in.

DATE: 10/28/81	NOZZLE: #4
TEST POINT: L.V. -	ACOUSTIC - 422
PLOT IDENTIFICATION: G - 267	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL ϕ : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. (ϕ) -	VOLTS $X \sim 8$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 407 F.P.S./UNIT	
HISTOGRAMS: H-646 TO H-650	

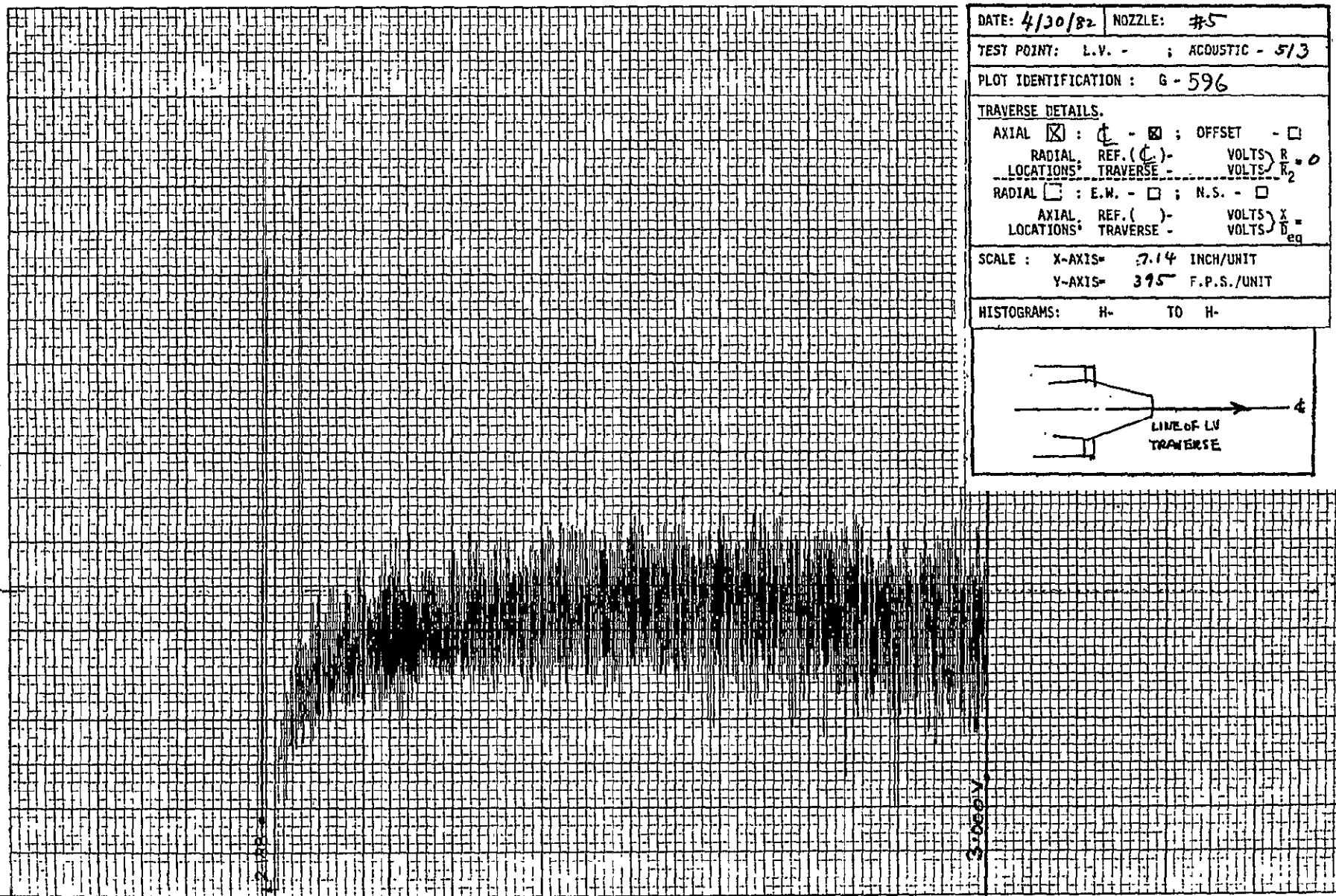
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5.2.7 Laser Velocimeter Data of Model 5

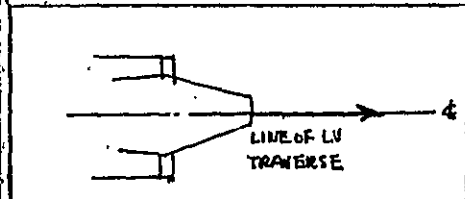
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LUTHER, NEW YORK
1000



DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 5/3	
PLOT IDENTIFICATION: G-596	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 0$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}} =$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 7.14 INCH/UNIT	
Y-AXIS= 395 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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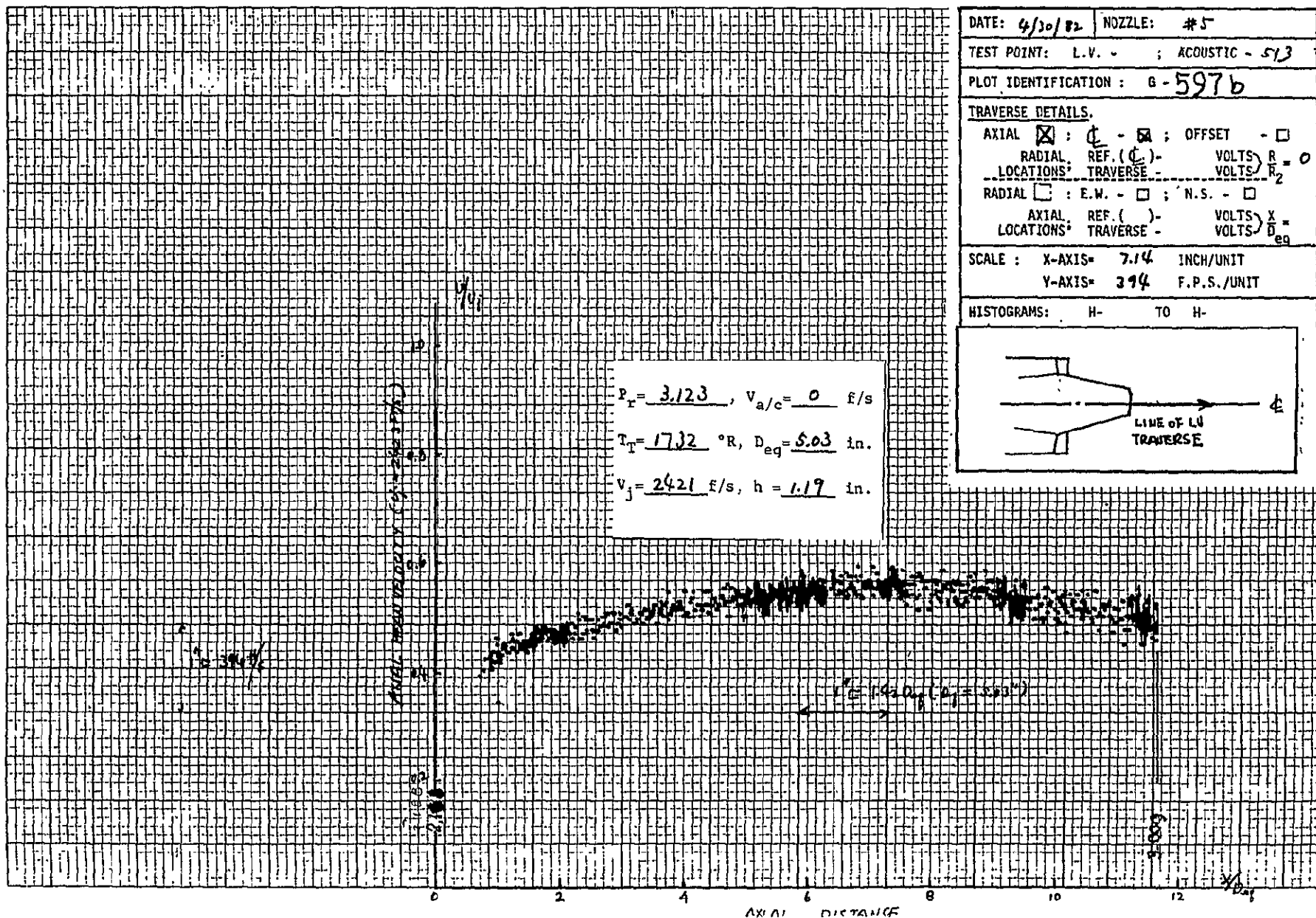
0

INCORRECT X-SCALE

DATE: 4/30/52	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-597	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS =	INCH/UNIT
Y-AXIS =	F.P.S./UNIT
HISTOGRAMS: H- TO H-	
MINI 10 PER POINT	

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DATE: 4/30/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 513

PLOT IDENTIFICATION: G-597b

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ϕ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS $R_1 = 0$

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS X

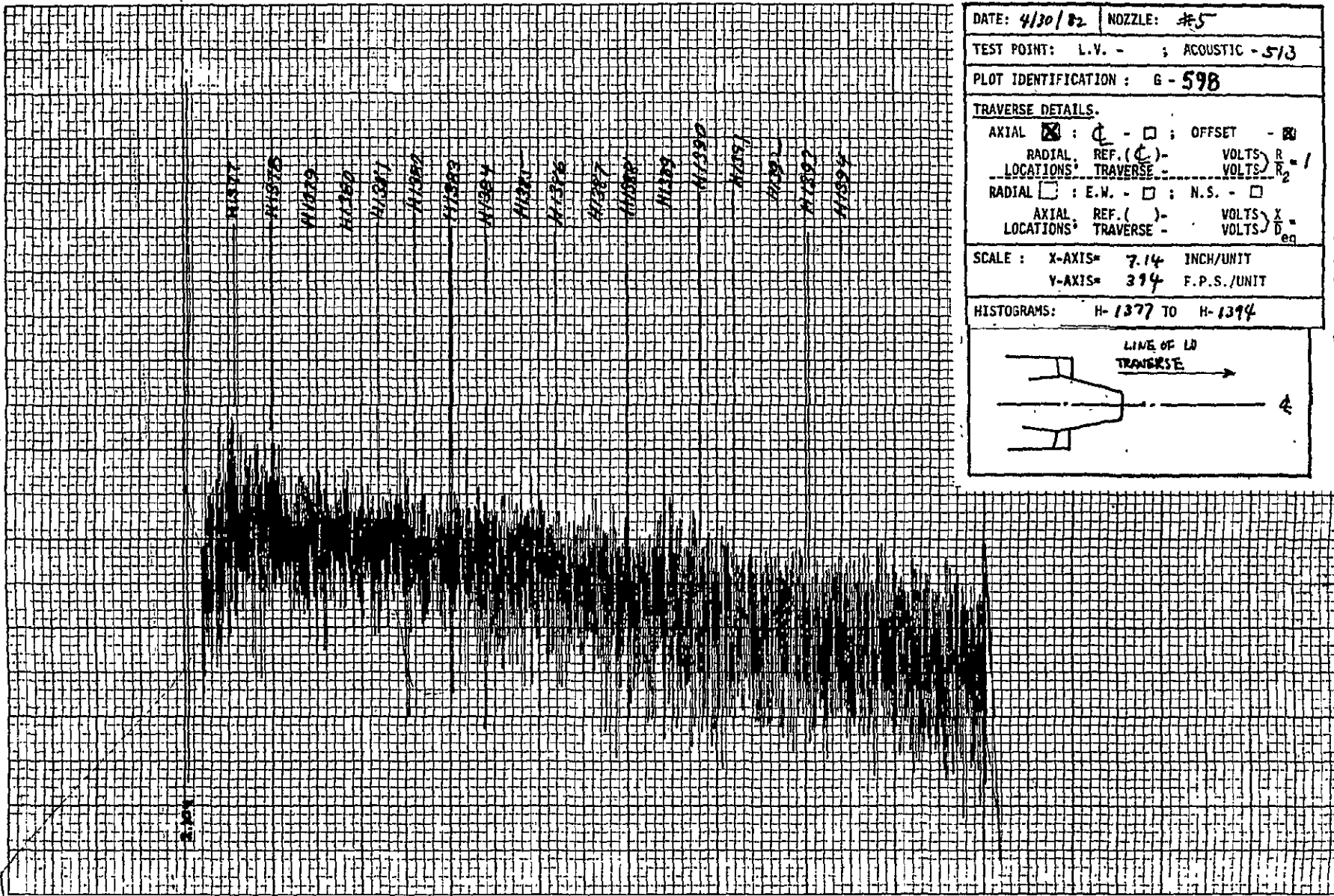
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 7.14 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

1080



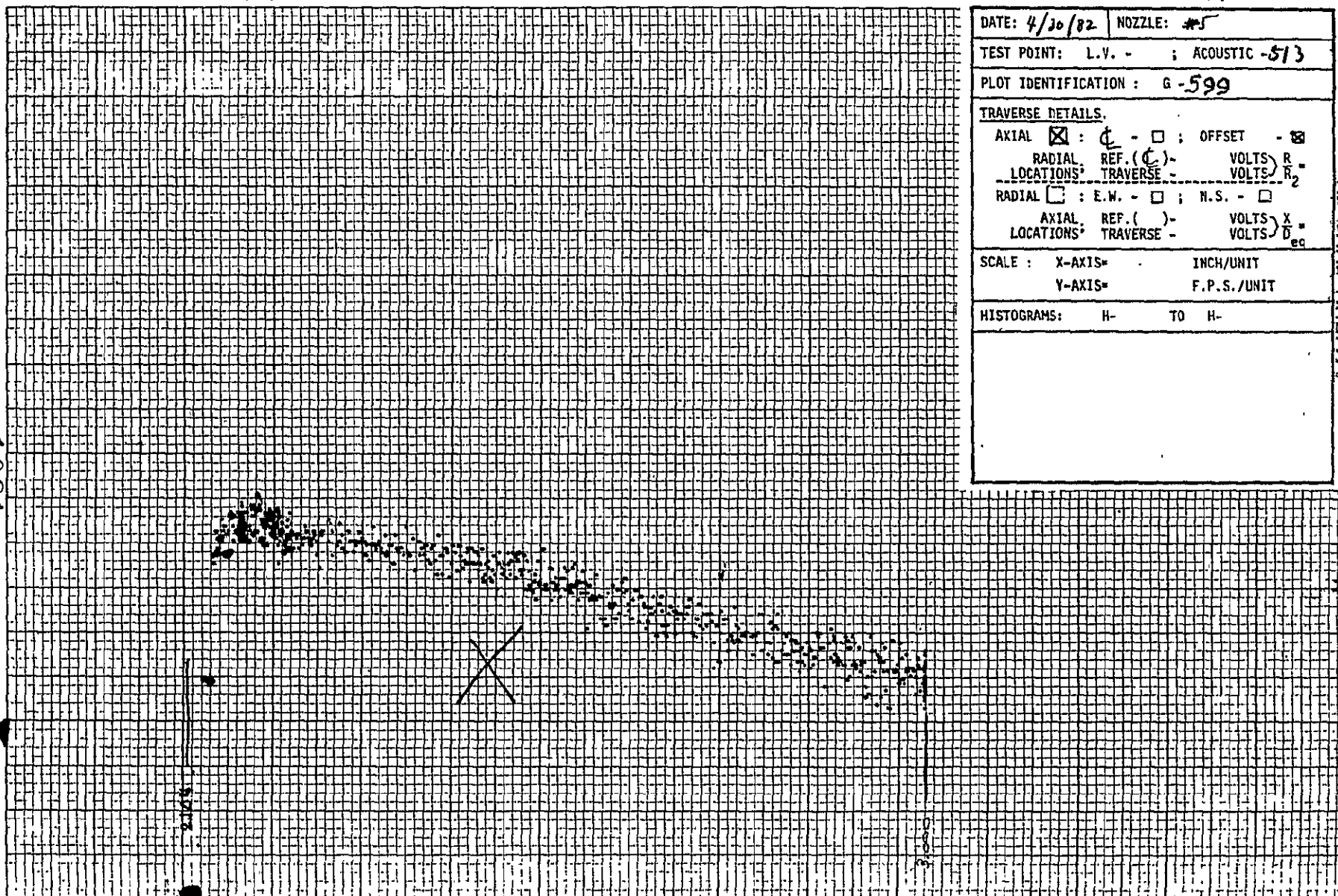
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 598	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 1$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 7.14 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1377 TO H-1394	

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INCORRECT.

DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-599	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= INCH/UNIT	
Y-AXIS= F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

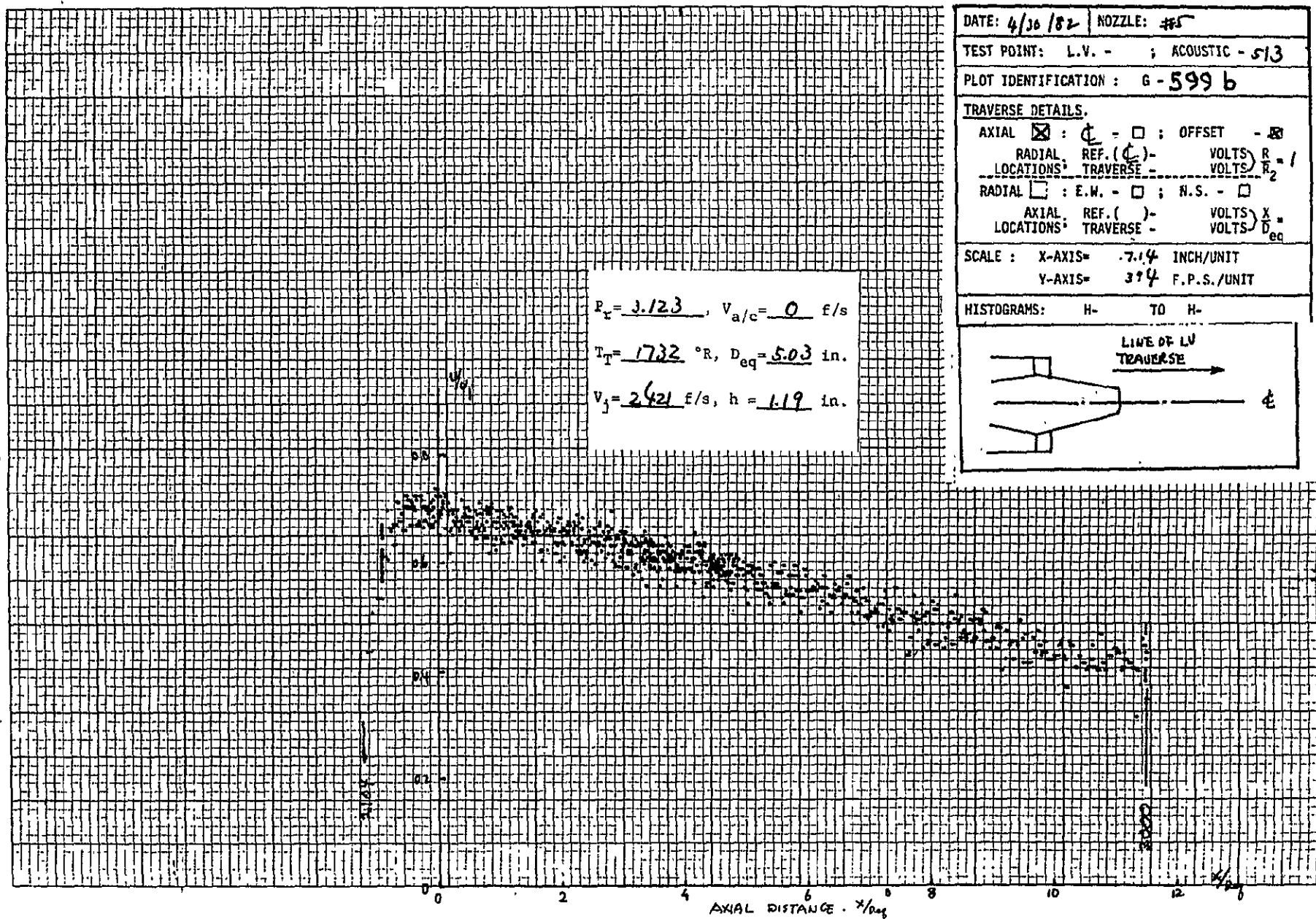
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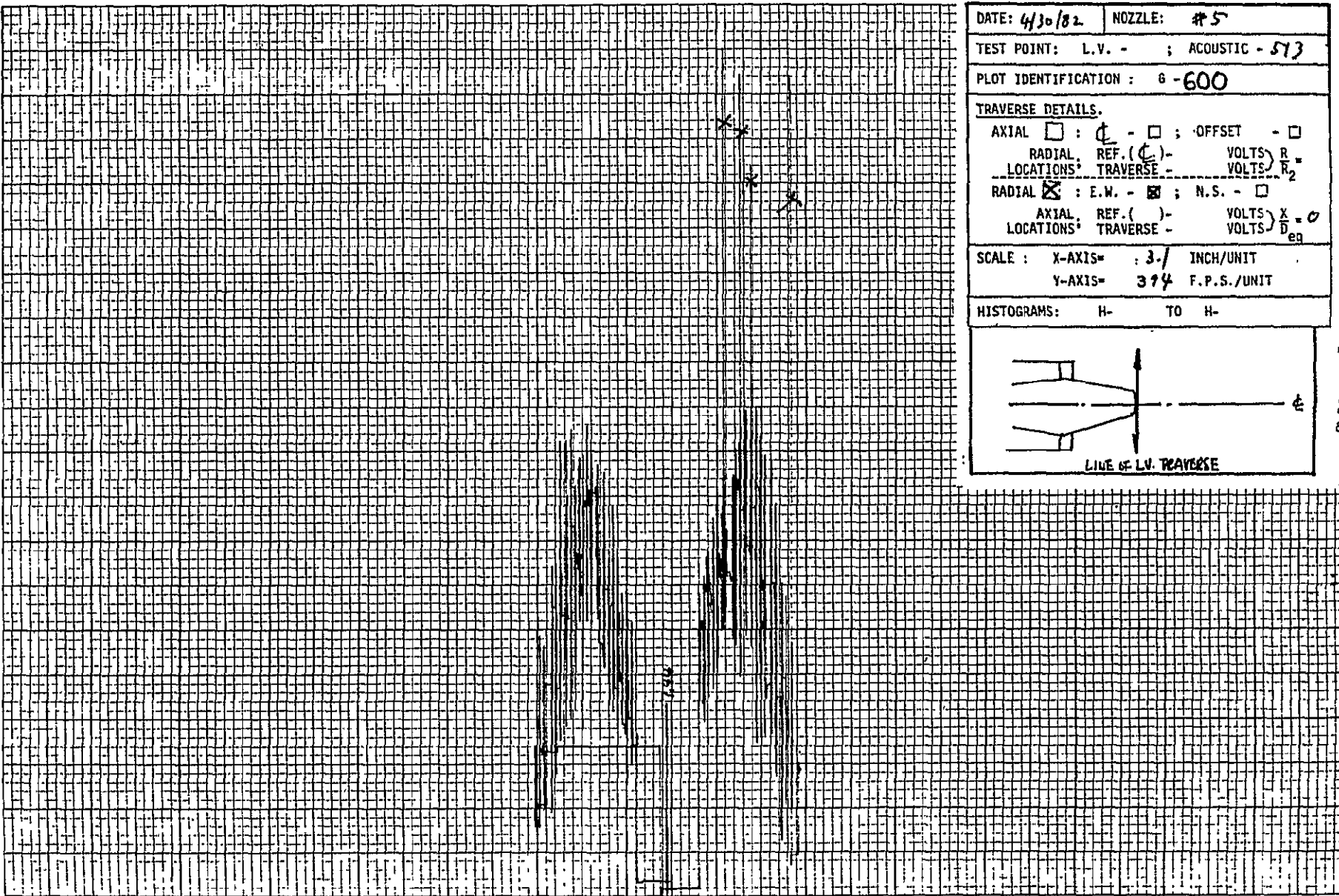
INCORRECT X SCALE: USE G-599b. G-598 is OK.

NO. XY 1101

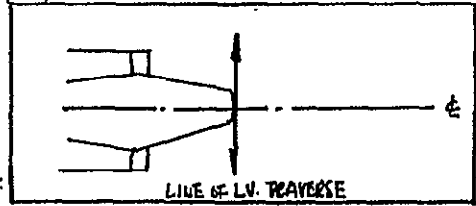
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1083



DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 573	
PLOT IDENTIFICATION : 6-600	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS = 3. / INCH/UNIT	
Y-AXIS = 374 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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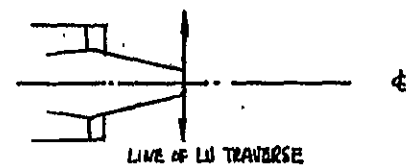
$$P_z = 3.123, v_{a/c} = 0 \text{ f/s}$$

$$T_1 = 1732^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

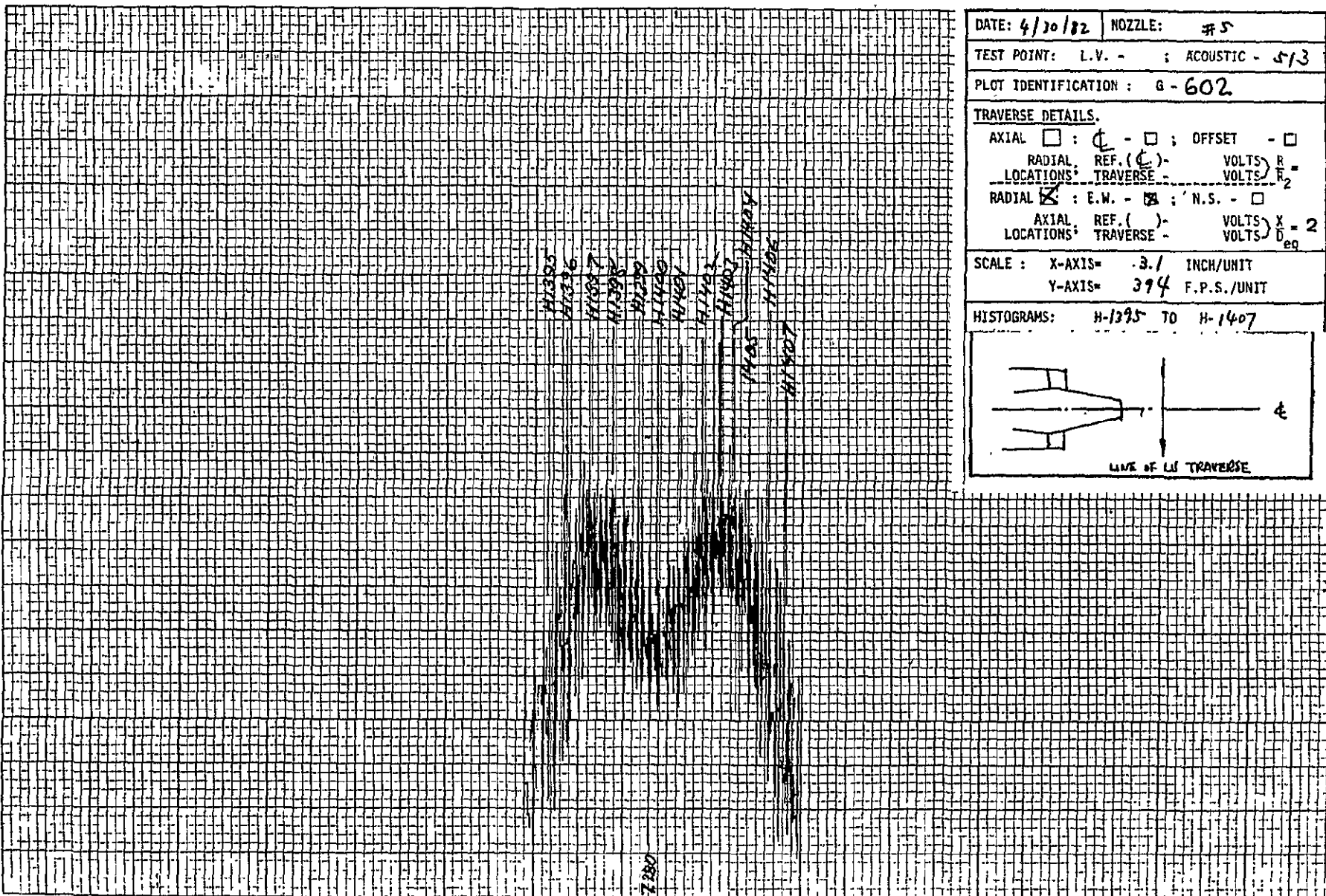
$$v_j = 2621 \text{ f/s}, h = 1.19 \text{ in.}$$

-1.0 0 1.0
RADIAL DISTANCE: r/D_{eq}

DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-601	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (C) -	VOLTS R_1
LOCATIONS* TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS X = 0
LOCATIONS* TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 0.1 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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DATE: 4/30/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 5/3

PLOT IDENTIFICATION: G-602

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

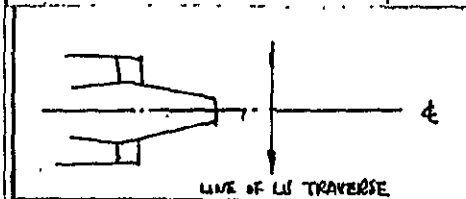
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= .31 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

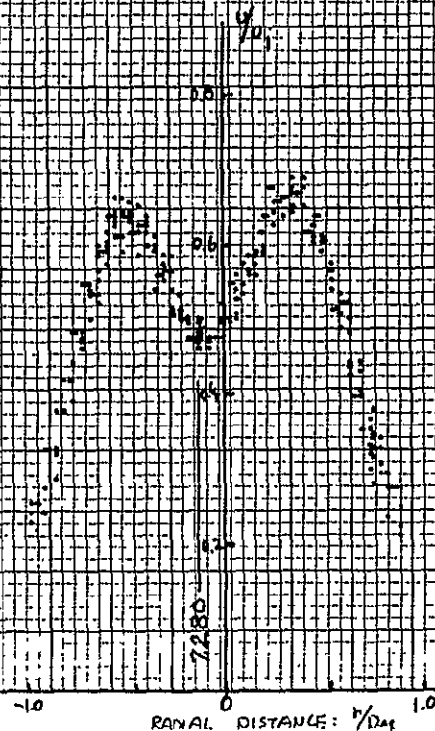
HISTOGRAMS: H-1395 TO H-1407



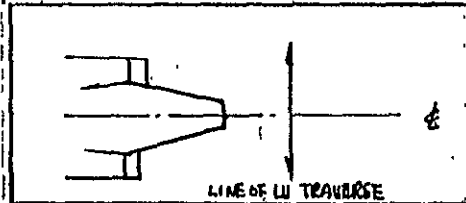
$$P_r = 3.123, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 1732^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$v_j = 2421 \text{ f/s}, h = 1.19 \text{ in.}$$



DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 603	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS R_1
LOCATIONS, TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS X
LOCATIONS, TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.1 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



1087

DATE: 4/30/82 NOZZLE: # 5

TEST POINT: L.V. - ; ACOUSTIC - 5/3

PLOT IDENTIFICATION: G-604

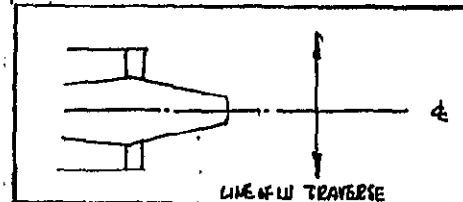
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1 LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS: 3.1 INCH/UNIT

Y-AXIS: 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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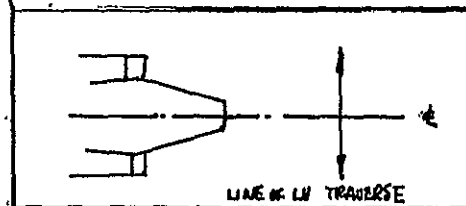
$$P_r = 3.123, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 1732^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

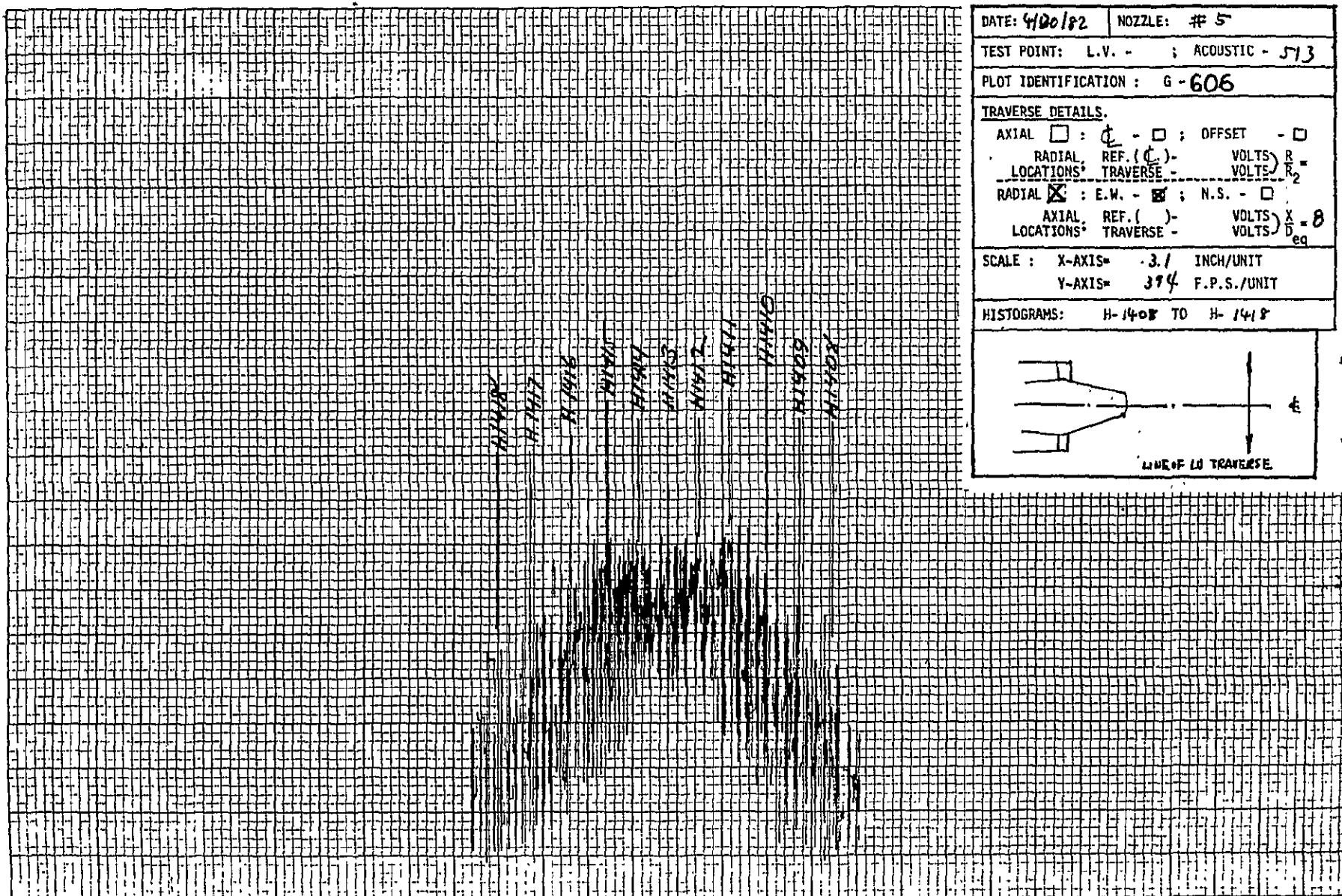
$$v_j = 2621 \text{ f/s}, h = 1.19 \text{ in.}$$



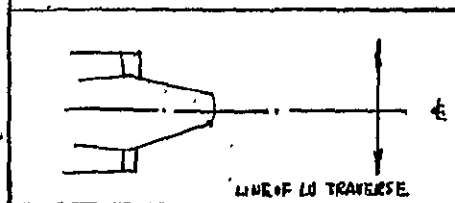
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G-605	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.1 INCH/UNIT	
Y-AXIS = 314 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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DATE: 4/20/82	NOZZLE: # 5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-606	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	$D_{eq} = 8$
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= .31 INCH/UNIT	
Y-AXIS= 374 F.P.S./UNIT	
HISTOGRAMS: H-1408 TO H-1418	

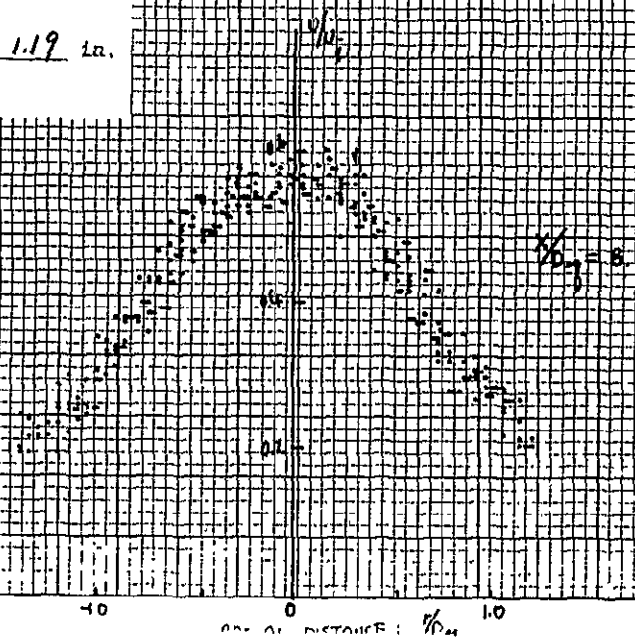


NO. XY 1101

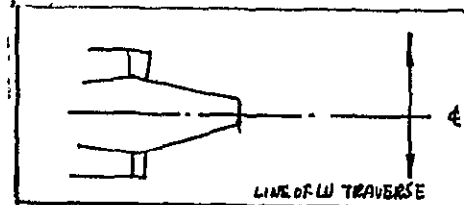
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SPARKING CONTROLS CORPORATION
BUFFALO, NEW YORK
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1090

$P_r = 3.123$, $V_{a/c} = 0$ f/s
 $T_T = 1732$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.



DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 607	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X = 8$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS = 3.1 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

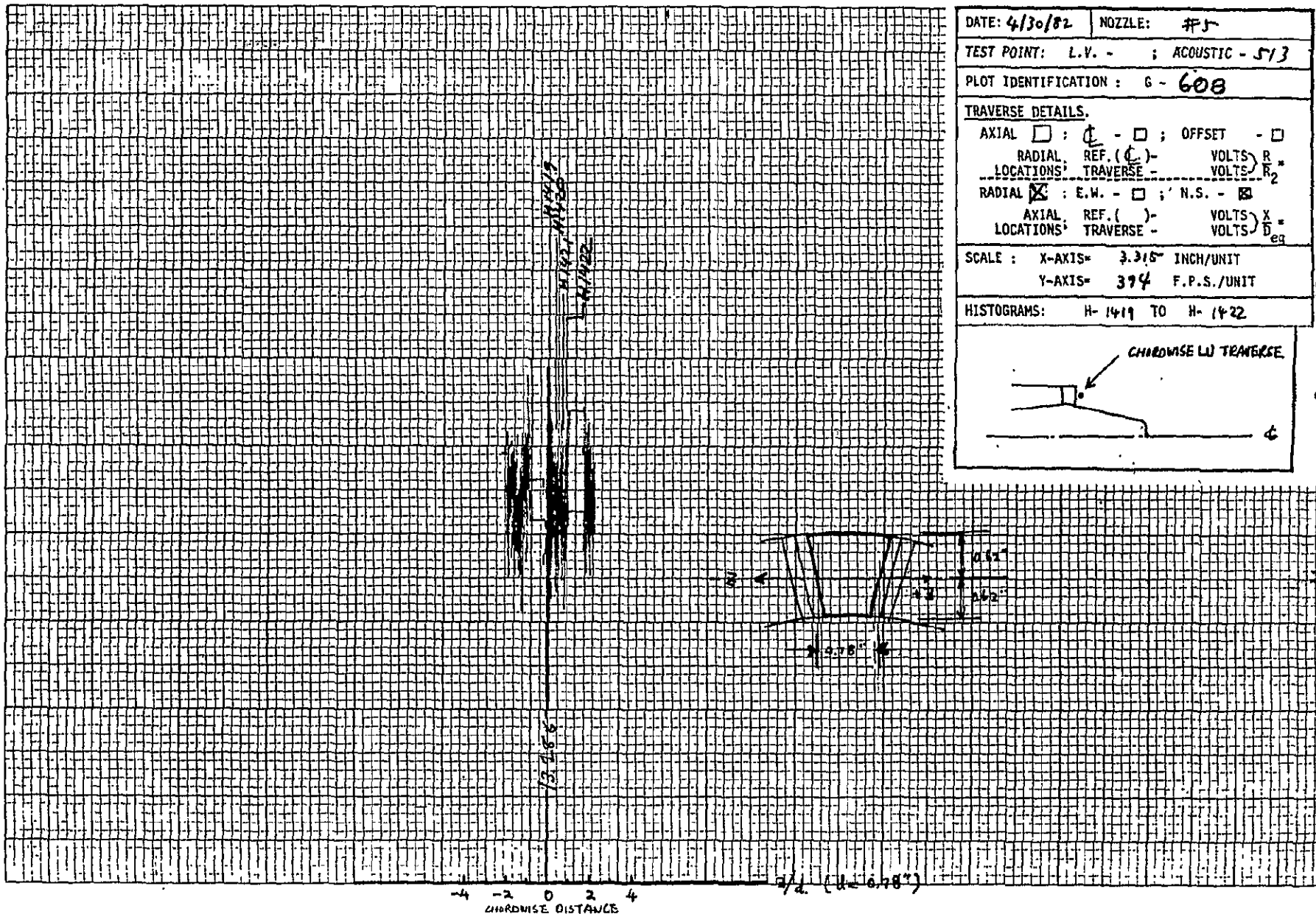


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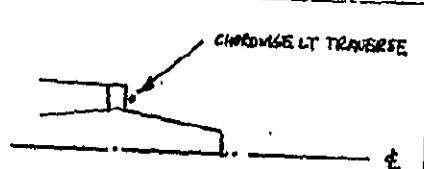
NO. XY 1101

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CHARTS FOR THE CORPORATION
CHARTS FOR THE CORPORATION
CHARTS FOR THE CORPORATION

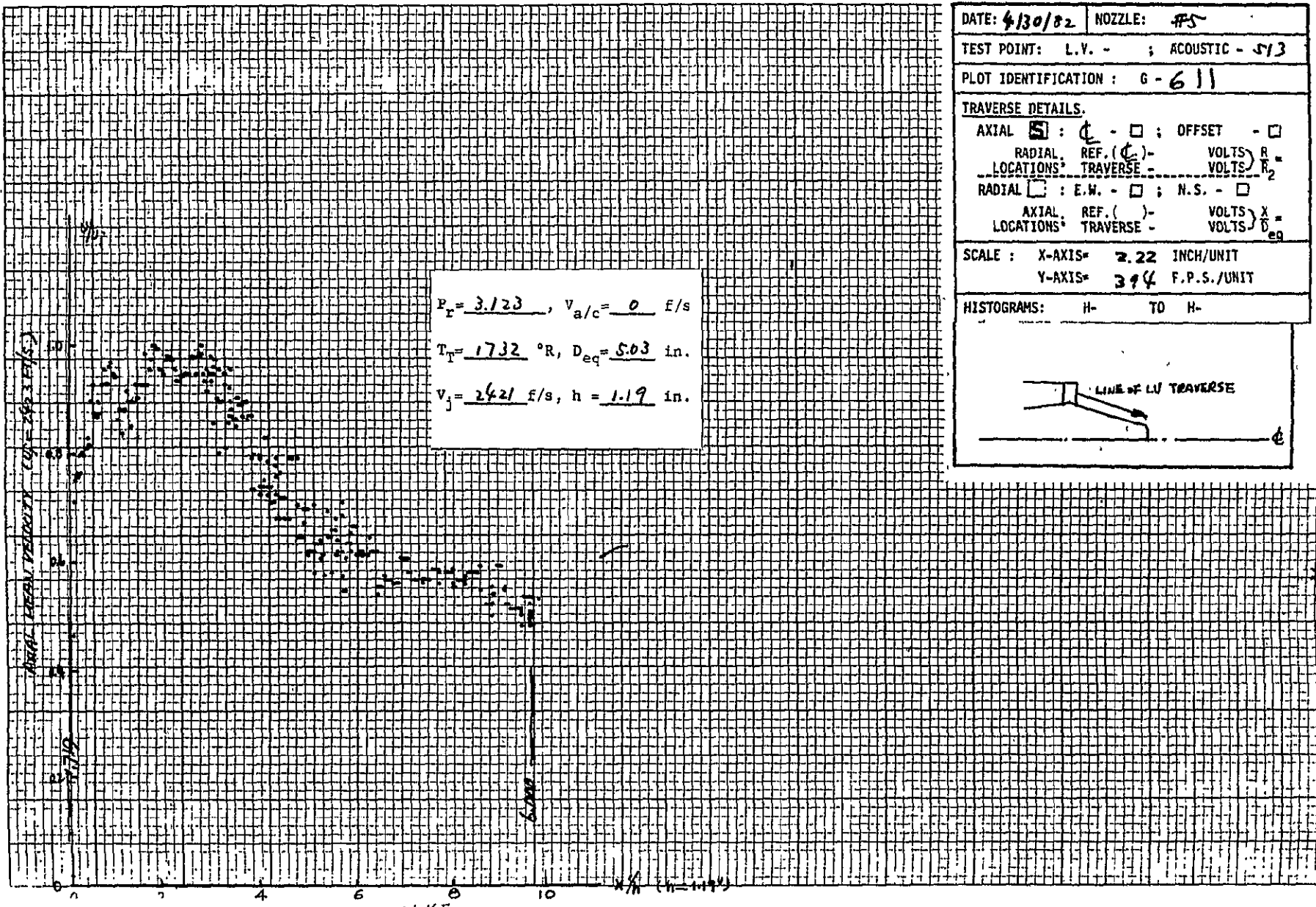
$P_r = 3.123$, $V_{a/c} = 0$ f/s
 $T_r = 1732$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.

-1.0 0 1.0
CHORDWISE DISTANCE

DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 609	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
 <p>CHORDWISE LT TRAVERSE</p>	

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DATE: 4/30/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 513

PLOT IDENTIFICATION: G-611

TRAVERSE DETAILS.

AXIAL ☒ : ☐ - ☐ ; OFFSET - ☐RADIAL REF. (C) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

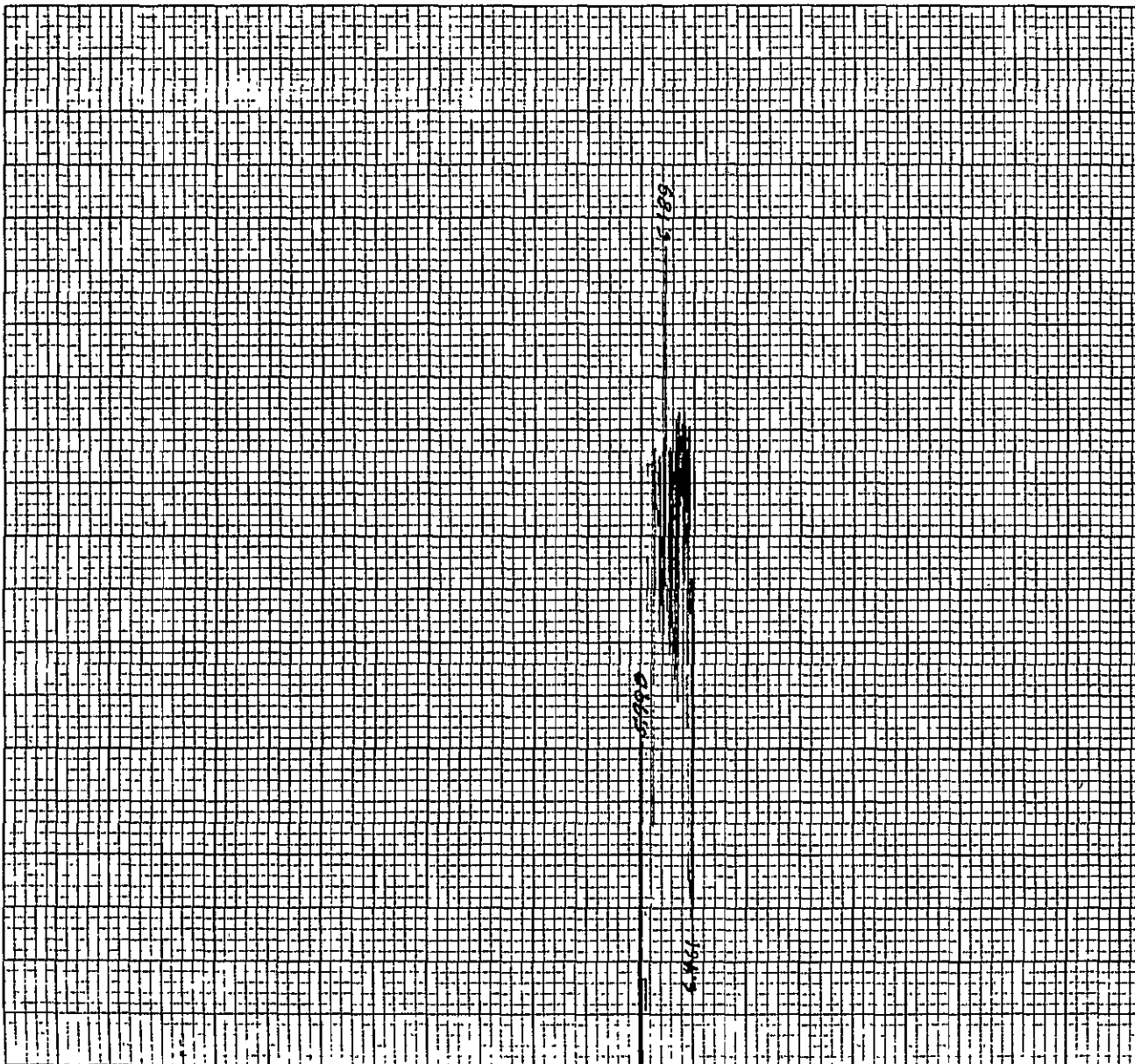
HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE

NO. XY 101

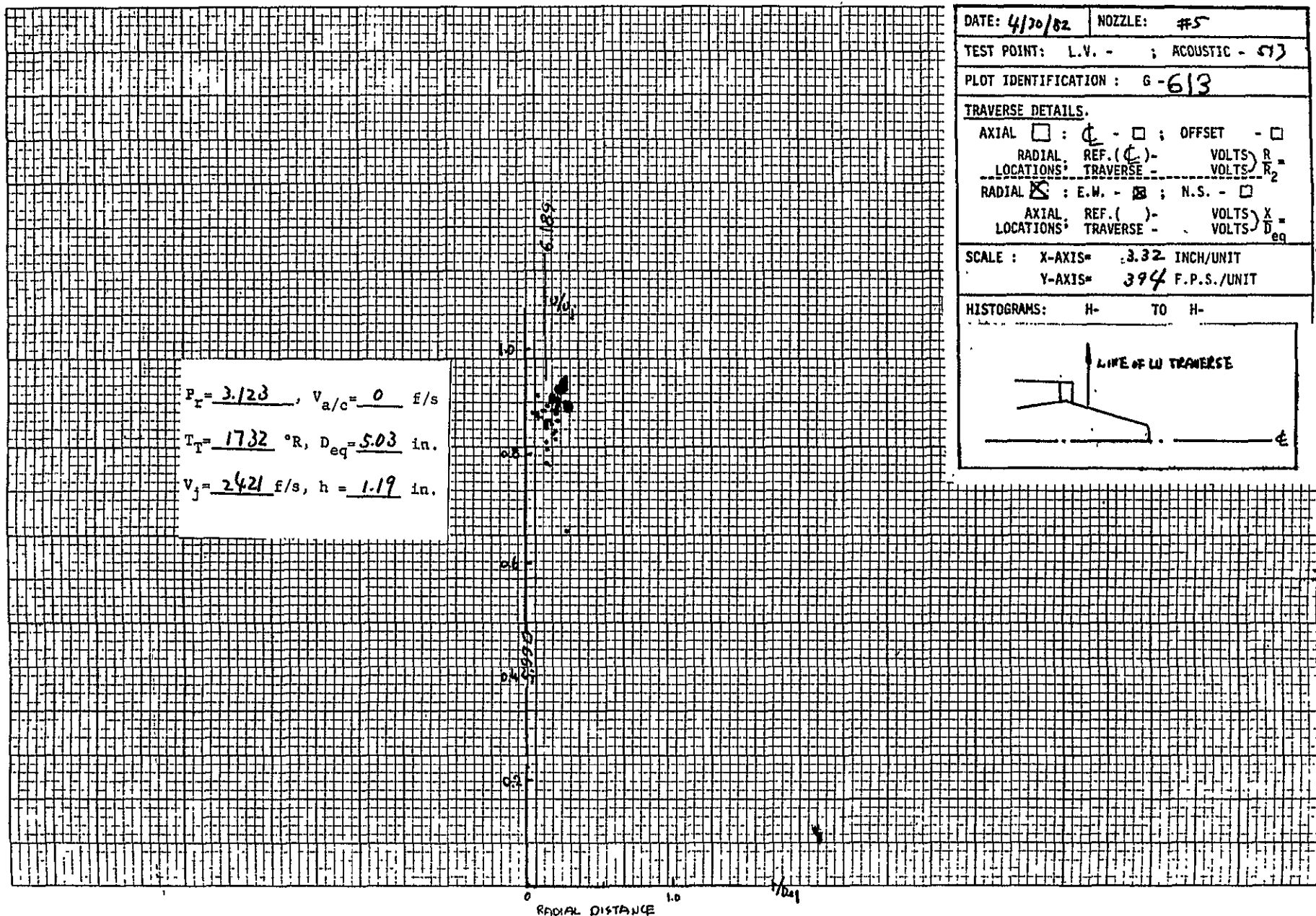
1095

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BUFFALO, NEW YORK
BR 1010 1011 1012



DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-612	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS X_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 374 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>The diagram shows a horizontal line with a vertical line segment extending upwards from it. The vertical segment is labeled 'LINE OF LV TRAVERSE'. A point labeled 'e' is marked on the horizontal line to the right of the vertical segment.</p>	

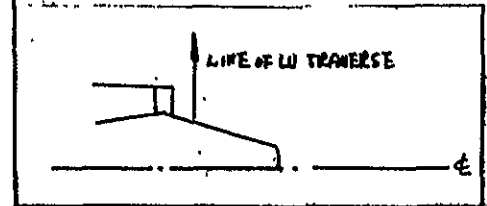
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DATE: 4/30/82 NOZZLE: #5
 TEST POINT: L.V. - ; ACOUSTIC - 57
 PLOT IDENTIFICATION: G-613
 TRAVERSE DETAILS:
 AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS: TRAVERSE - VOLTS R_2
 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 3.32 INCH/UNIT
 Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

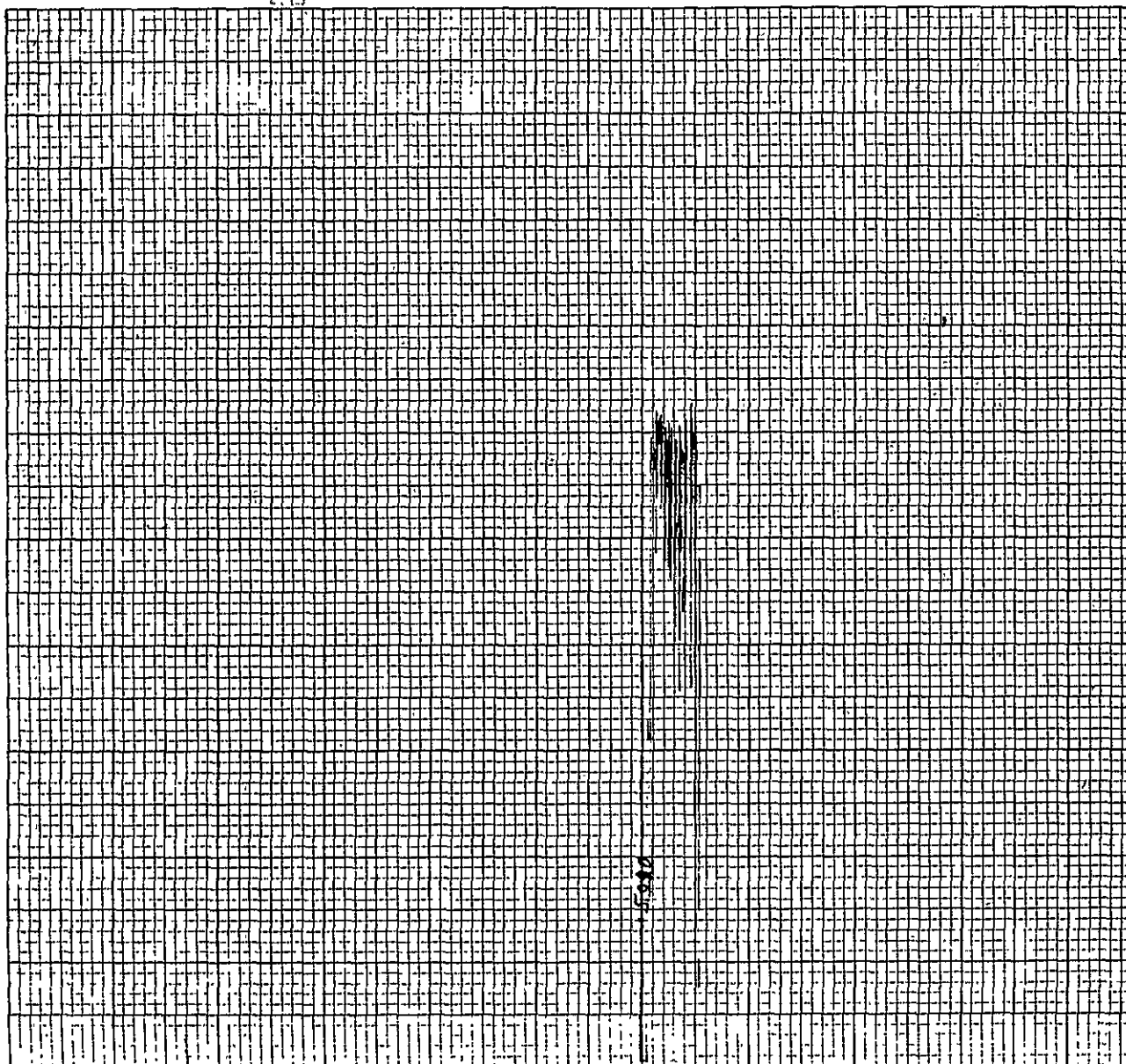


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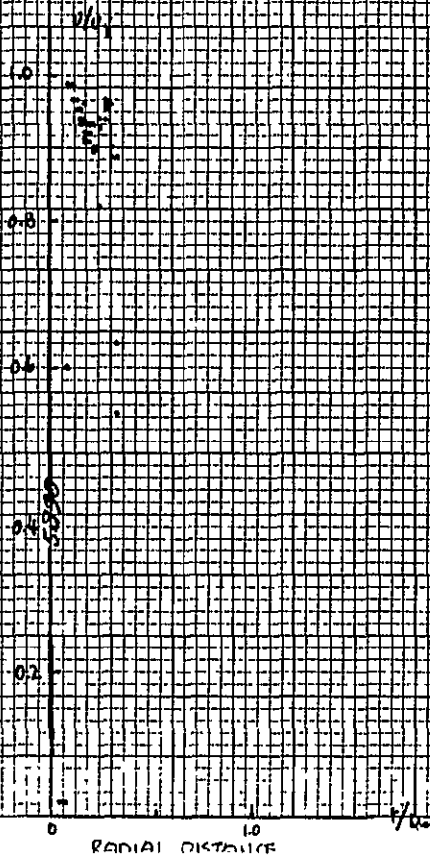
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G - 614	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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$$P_r = 3.123, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 1732^\circ R, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2421 \text{ f/s, } h = 1.19 \text{ in.}$$



DATE: 4/30/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 513

PLOT IDENTIFICATION: G-615

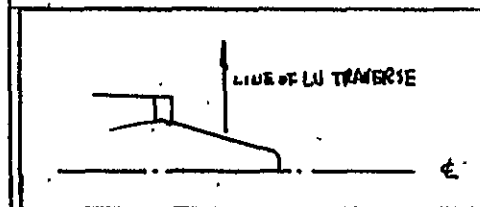
TRAVERSE DETAILS.

AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐RADIAL REF. (C) - VOLTS R_1 LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 394 F.P.S./UNIT

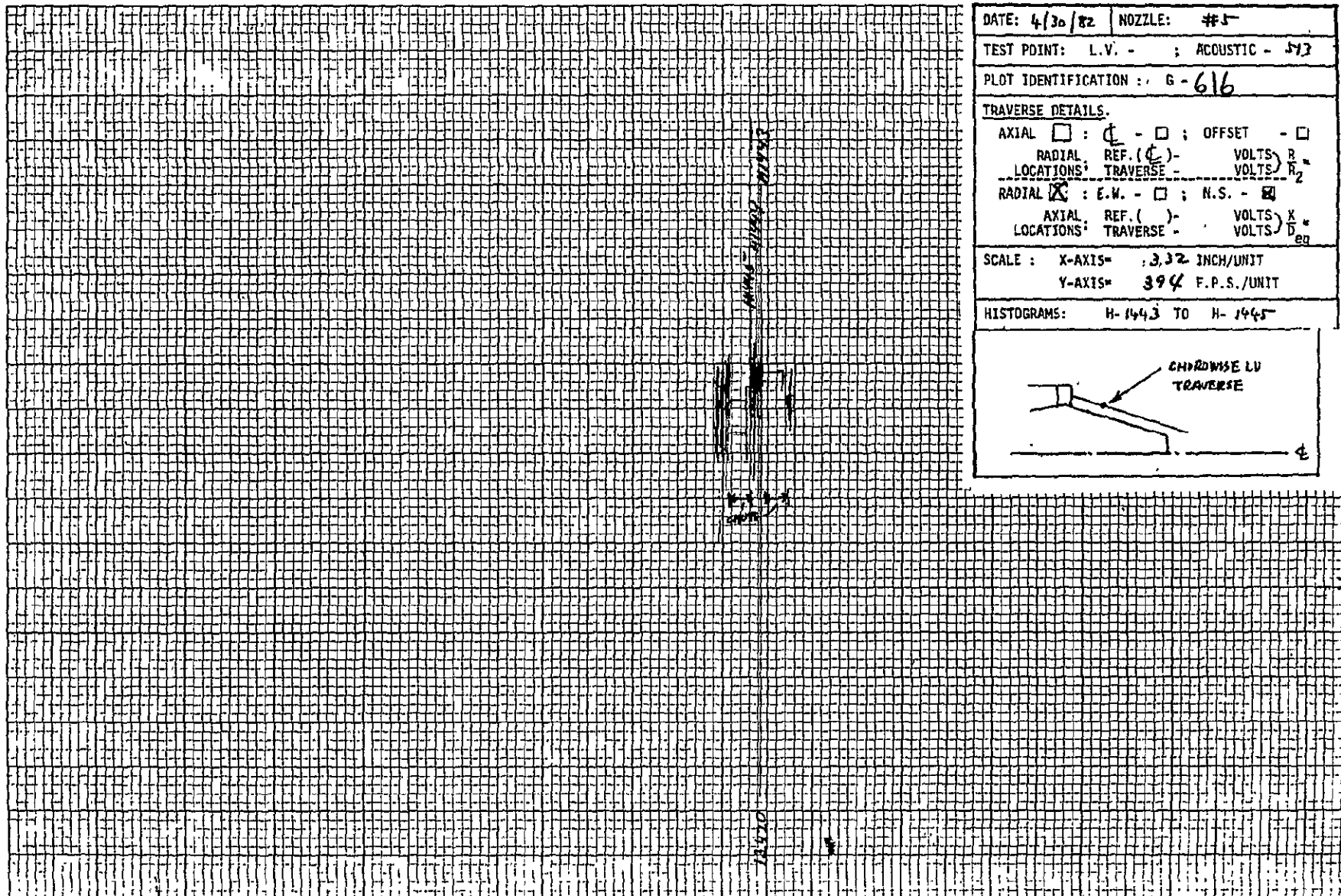
HISTOGRAMS: H- TO H-



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1099

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CHARGE COORDINATE CORRELATION
BRIDGE DIVISION
P.O. BOX 1000
ALBANY, N.Y.



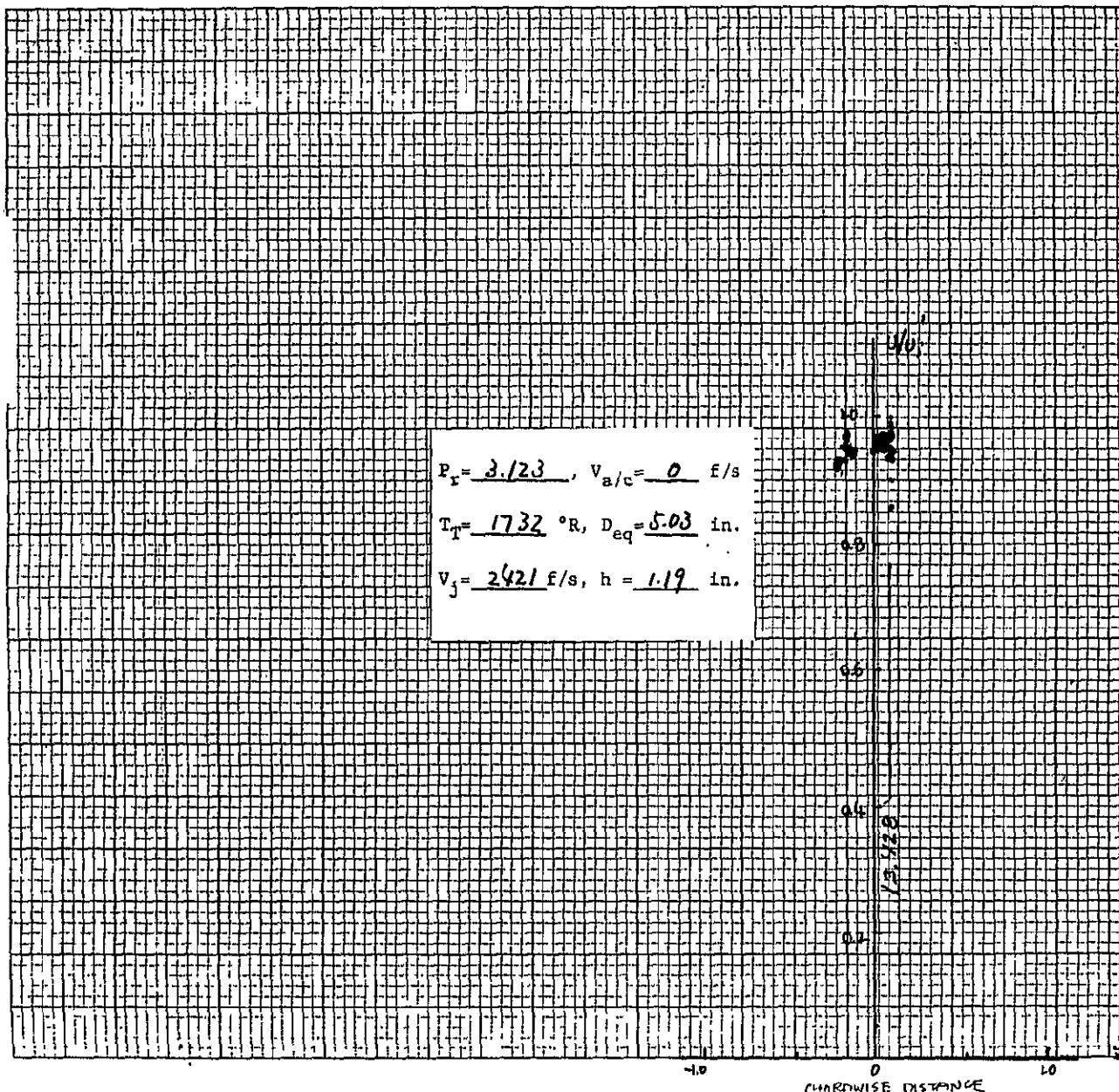
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 573
PLOT IDENTIFICATION: G-616	
TRAVERSE DETAILS:	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS=	3.32 INCH/UNIT
Y-AXIS=	394 F.P.S./UNIT
HISTOGRAMS:	H-1443 TO H-1445

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DATE: 4/30/62	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 517	
PLOT IDENTIFICATION: G - 617	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.M. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>CHORDWISE LV TRAVERSE</p>	

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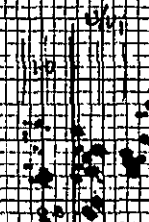
W-11 IN CHARGE
2004 WASH DISTRICT
NATIONAL BOARD OF DIRECTORS

W-11 IN 11-11-11
2004 W-11 DTG 11-11-11
2004 W-11 DTG 11-11-11
2004 W-11 DTG 11-11-11

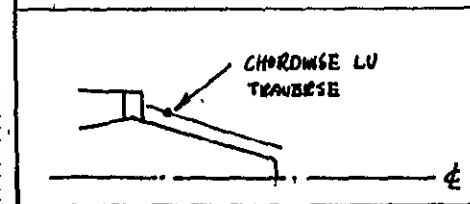


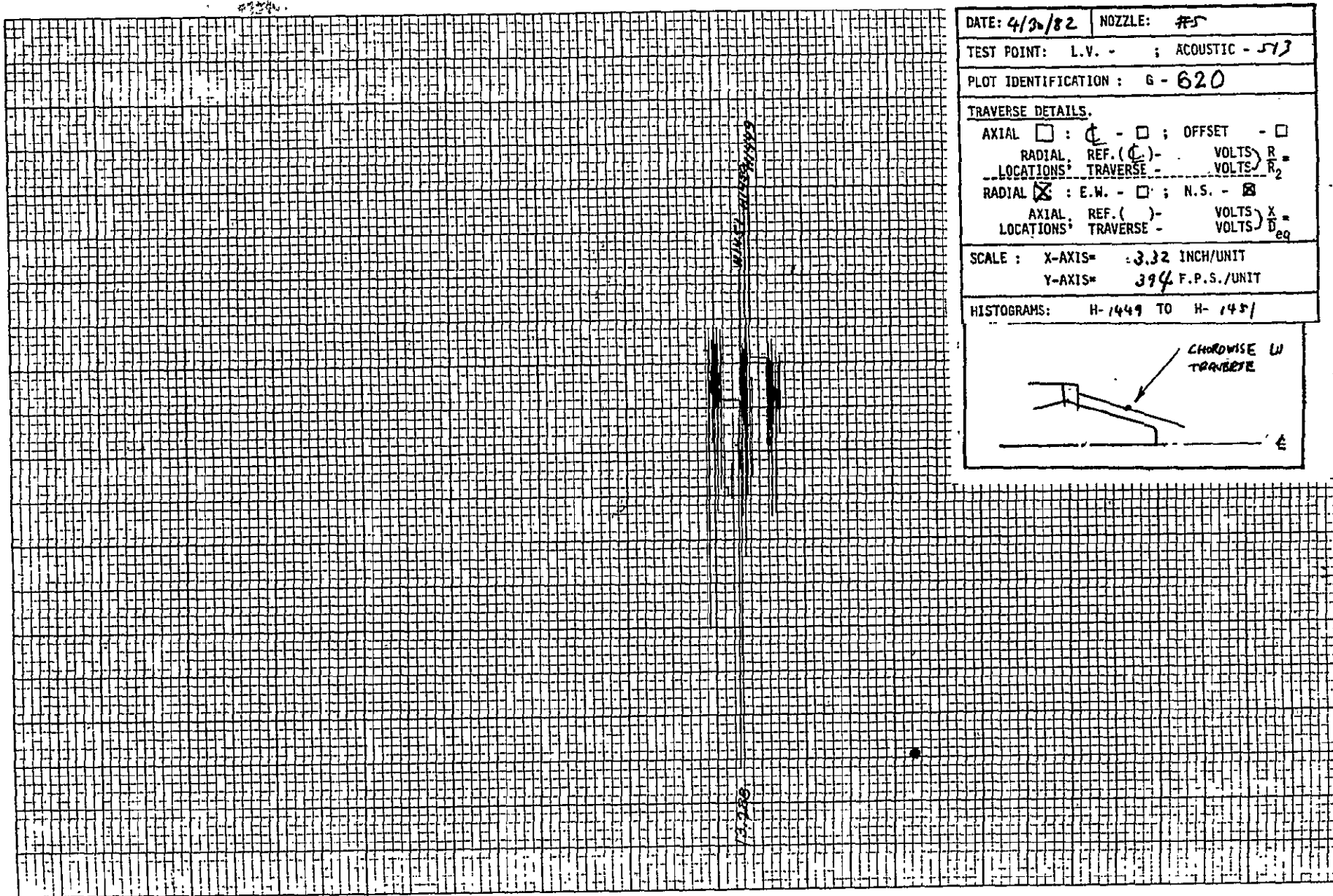
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$P_x = 3.123$, $V_{a/c} = 0$ f/s
 $T_T = 1732$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.



DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G-619	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS X_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

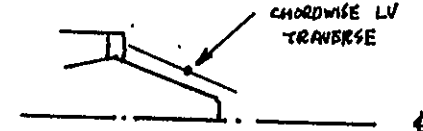




DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 620	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS* TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS* TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H-1449 TO H-1451	

$P_r = 3.128$, $V_{a/c} = 0$ f/s
 $T_r = 1732$ °R, $D_{eq} = 5.08$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.

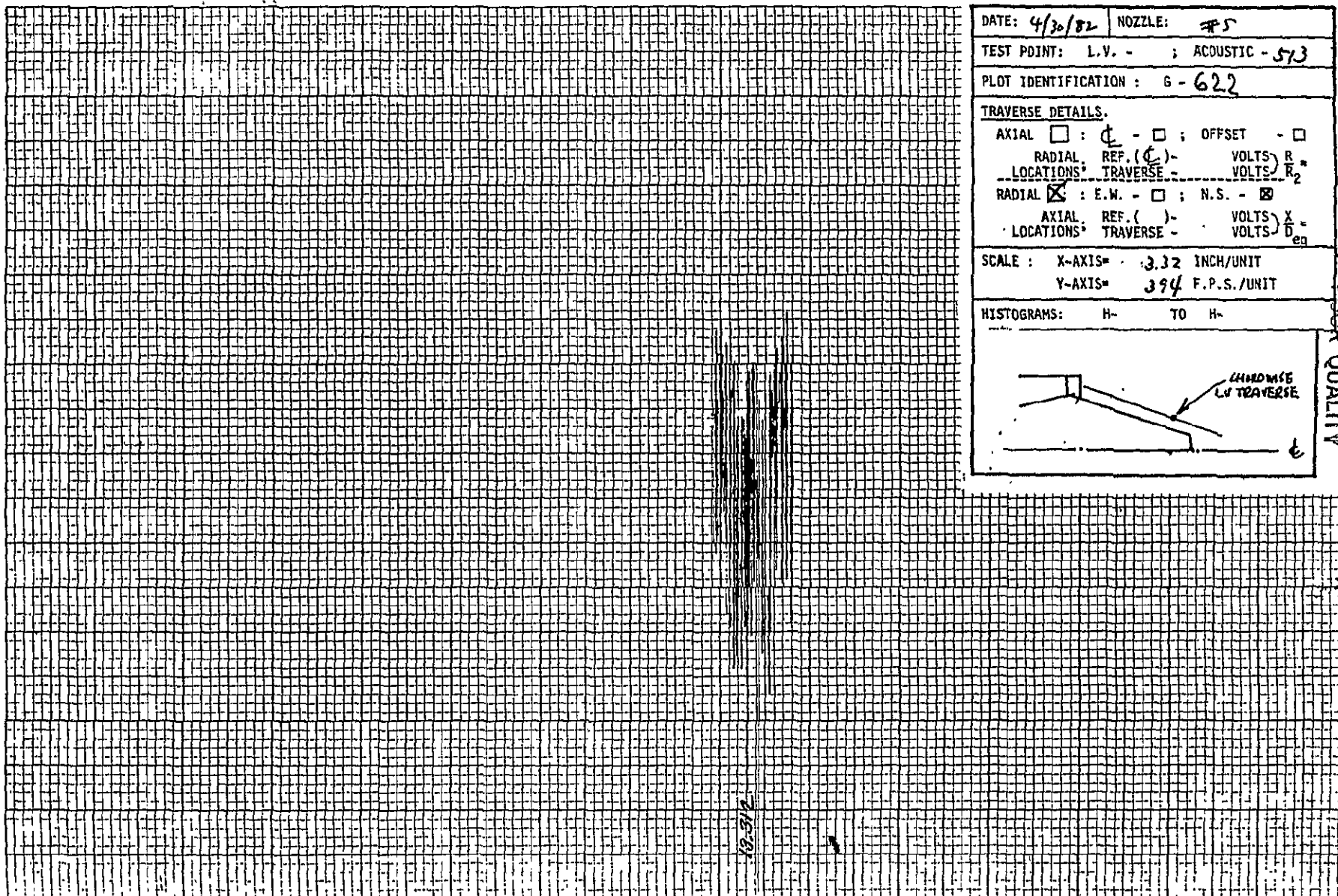
CHORDWISE DISTANCE

DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 621	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
	

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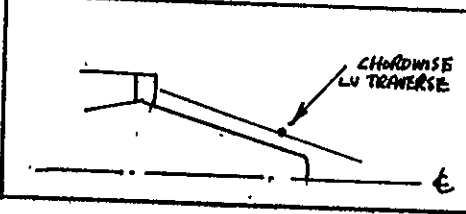
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 573	
PLOT IDENTIFICATION: G - 622	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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$P_r = 3.123$, $V_{a/c} = 0$ f/s
 $T_T = 1732$ °R, $D_{eq} = 5.00$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.

CHORDWISE DISTANCE

DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G - 623	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = .332 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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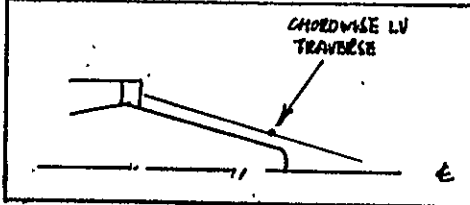
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G - 624	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS = 3.82 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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$P_r = 3.123$, $v_{a/c} = 0$ f/s
 $T_T = 1732$ °R, $D_{eq} = 5.03$ in.
 $v_j = 2421$ f/s, $h = 1.19$ in.



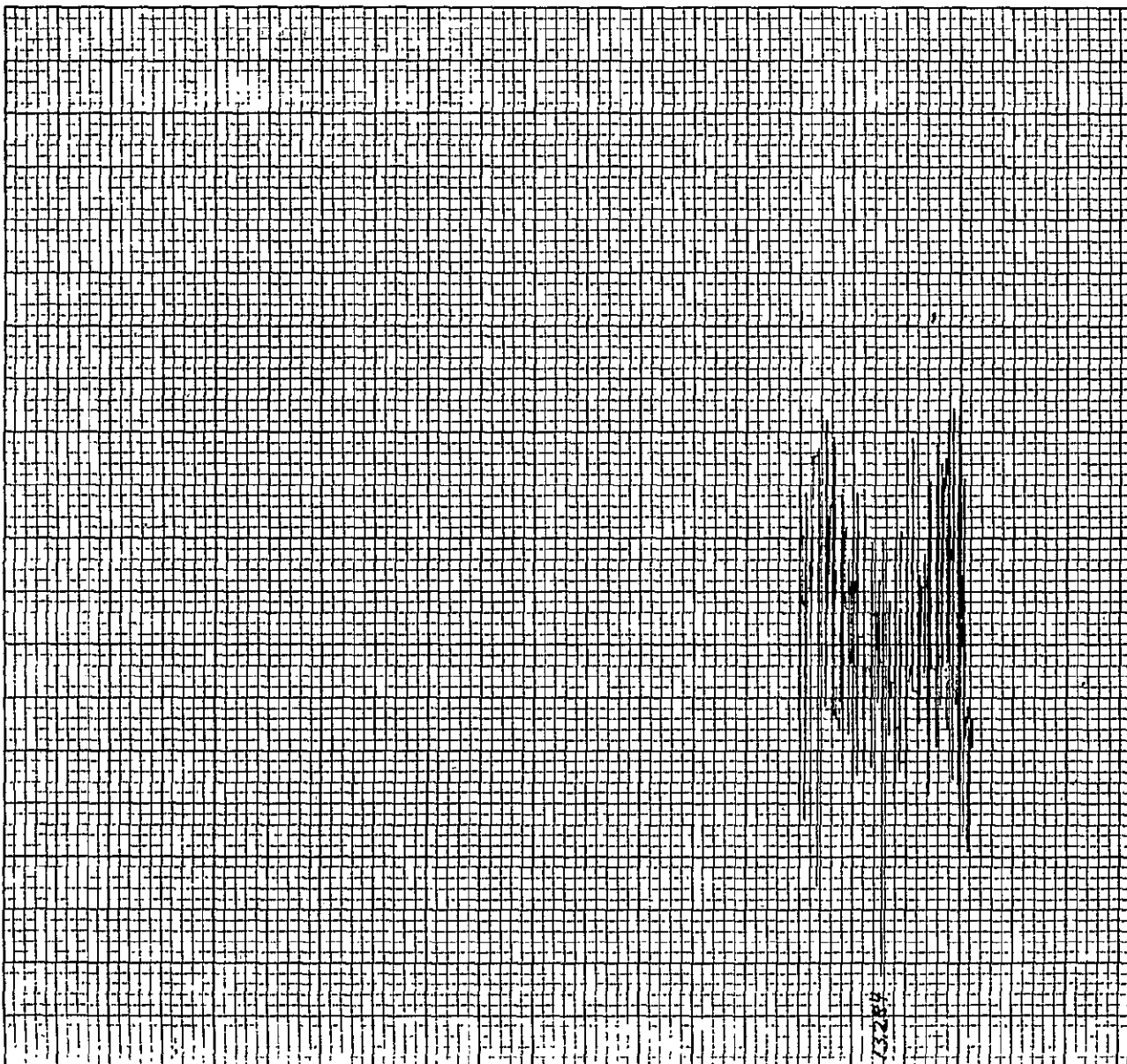
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-625	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_2	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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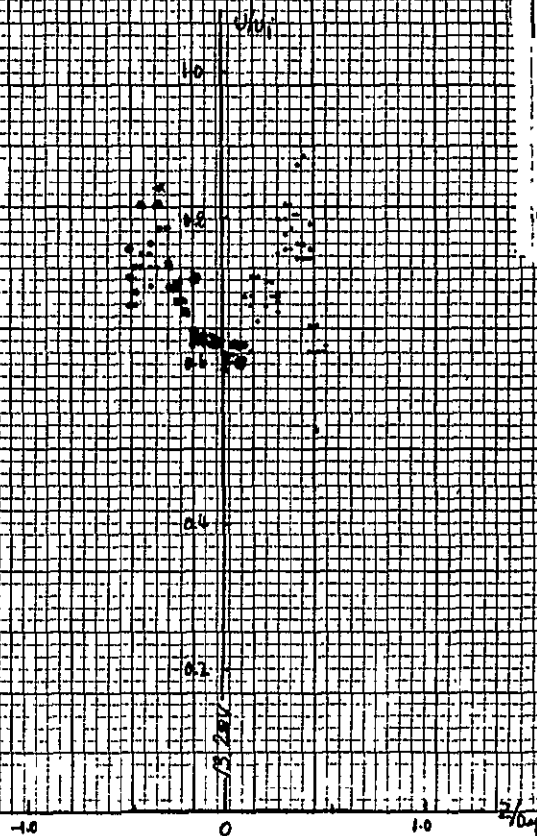
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 573
PLOT IDENTIFICATION: G-626	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2 =
LOCATIONS* TRAVERSE -	VOLTS R_2 =
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X =
LOCATIONS* TRAVERSE -	VOLTS O_{eq} =
SCALE : X-AXIS= .372 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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$P_r = 3.123$, $V_{a/c} = 0$ f/s
 $T_T = 1732$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.



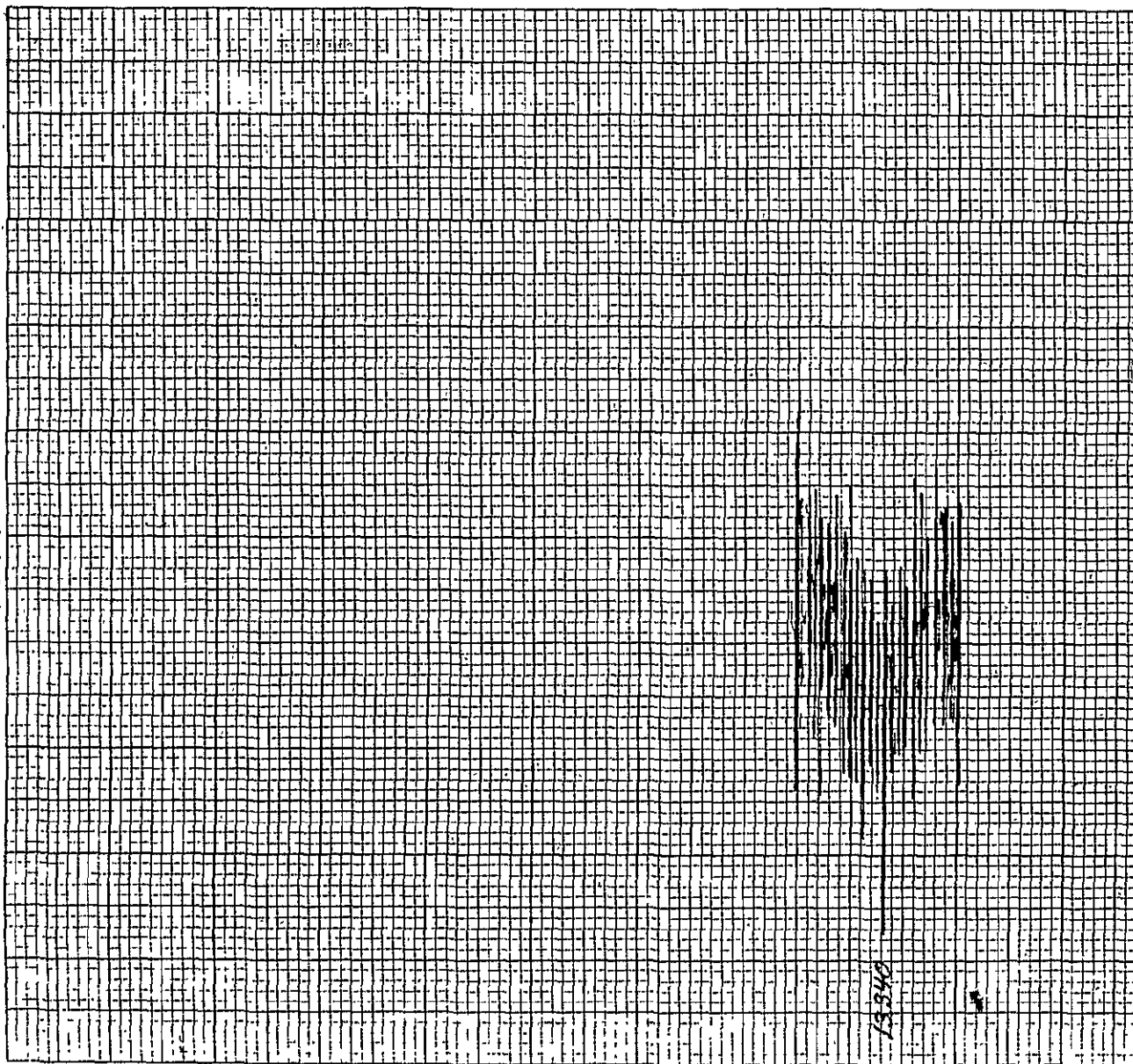
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 5/3	
PLOT IDENTIFICATION: G-627	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL LOCATIONS: REF. (ϕ) - TRAVERSE -	VOLTS R_1 - VOLTS R_2 -
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL LOCATIONS: REF. () - TRAVERSE -	VOLTS X - VOLTS D_{eq} -
SCALE : X-AXIS= 3.32 INCH/UNIT Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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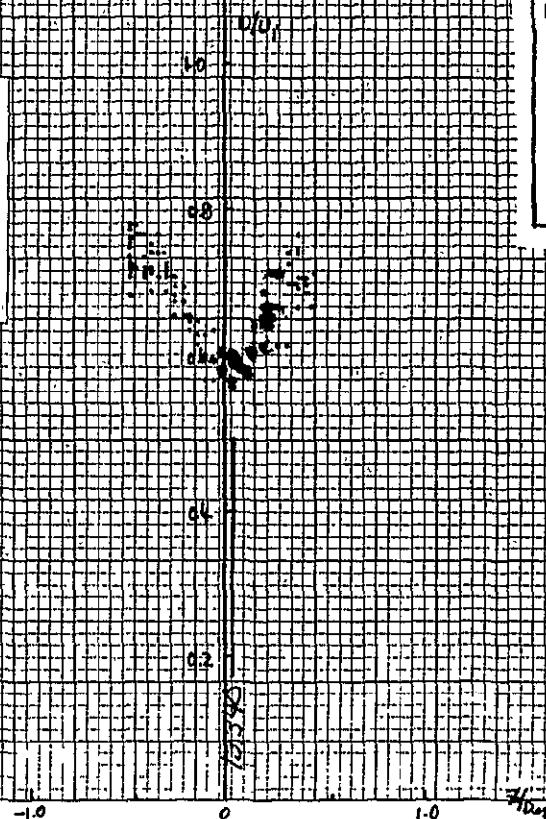
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G - 628	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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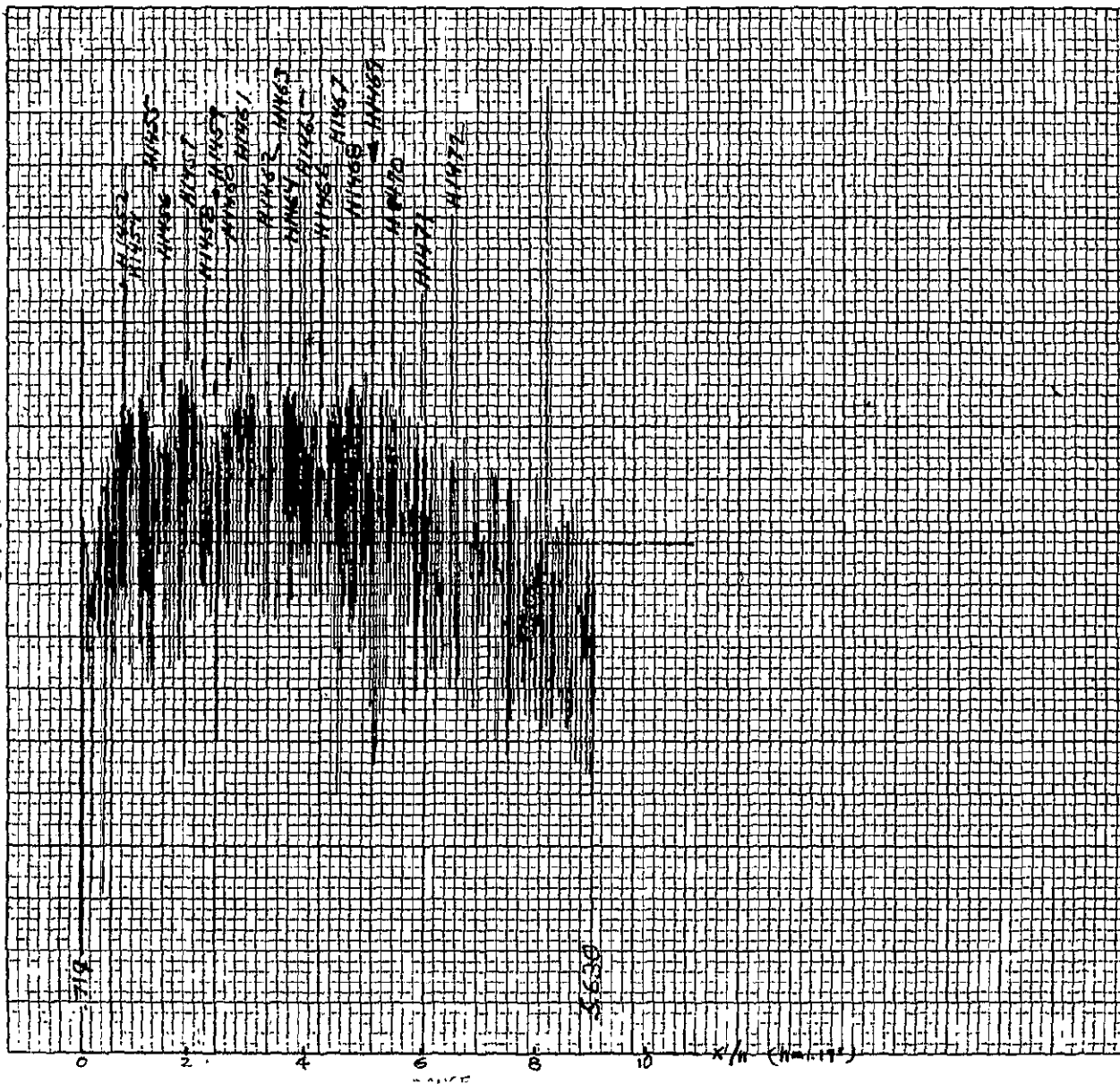
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 5/3	
PLOT IDENTIFICATION: G-629	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_2	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$P_r = 3.123$, $V_{a/c} = 0$ f/s
 $T_r = 1732$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2421$ f/s, $h = 1.19$ in.



RECORDING CHARTS
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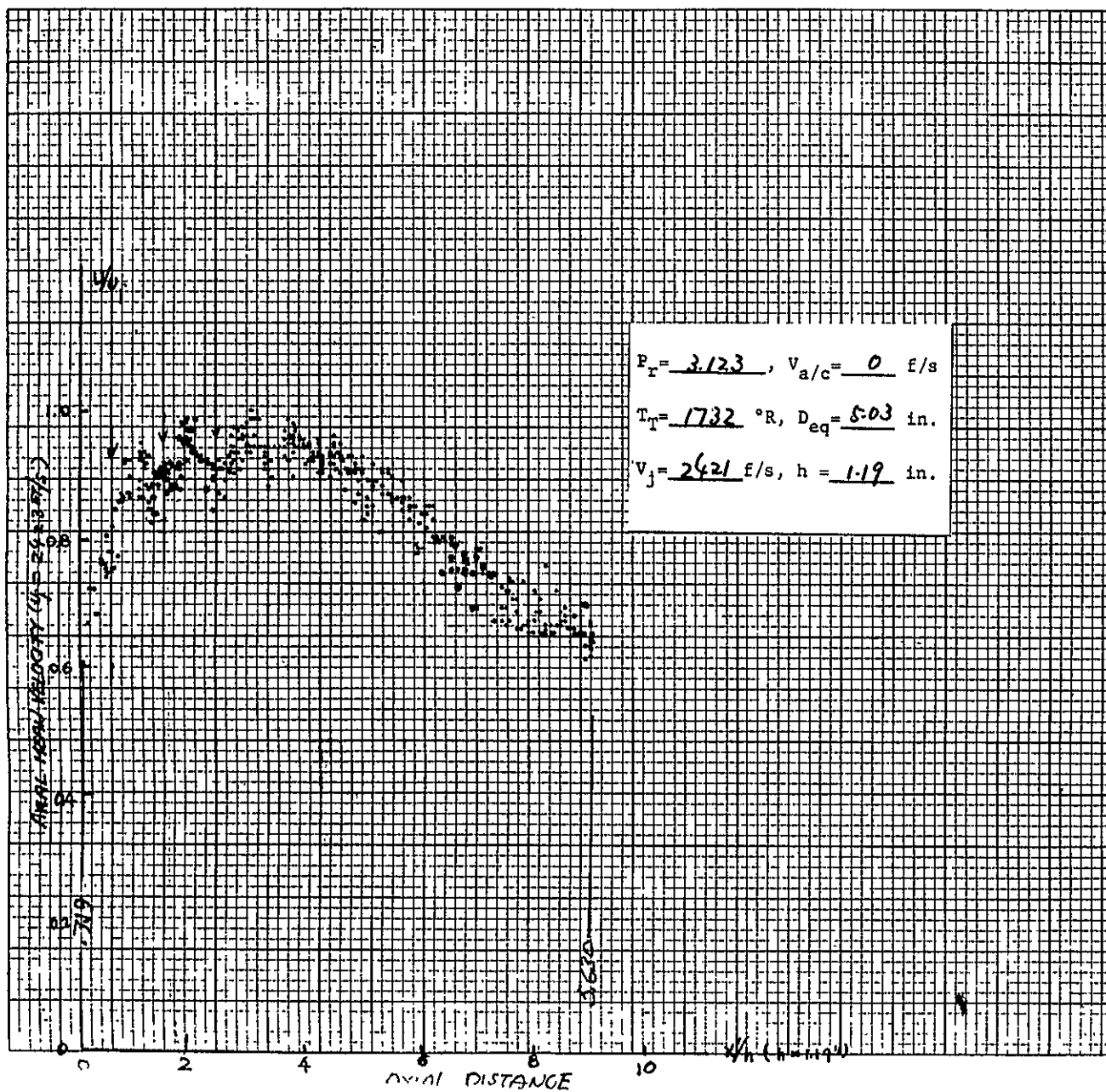
1113



A diagram of a roof truss structure. A horizontal line represents the ground level. A vertical line rises from the ground, then a diagonal line descends to the right, and finally a horizontal line continues to the right. The diagonal member is labeled "LINE OF W TRANSVERSE" with an arrow pointing along its length. A small circle is at the end of the final horizontal segment.

ORIGINAL PAGE IS
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1114



DATE: 4/30/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 513

PLOT IDENTIFICATION: G-631

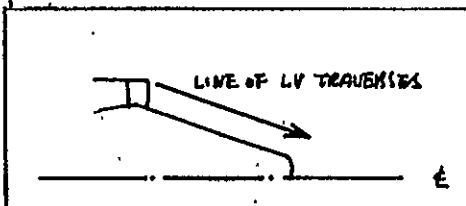
TRAVERSE DETAILS.

AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐RADIAL REF. (C) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

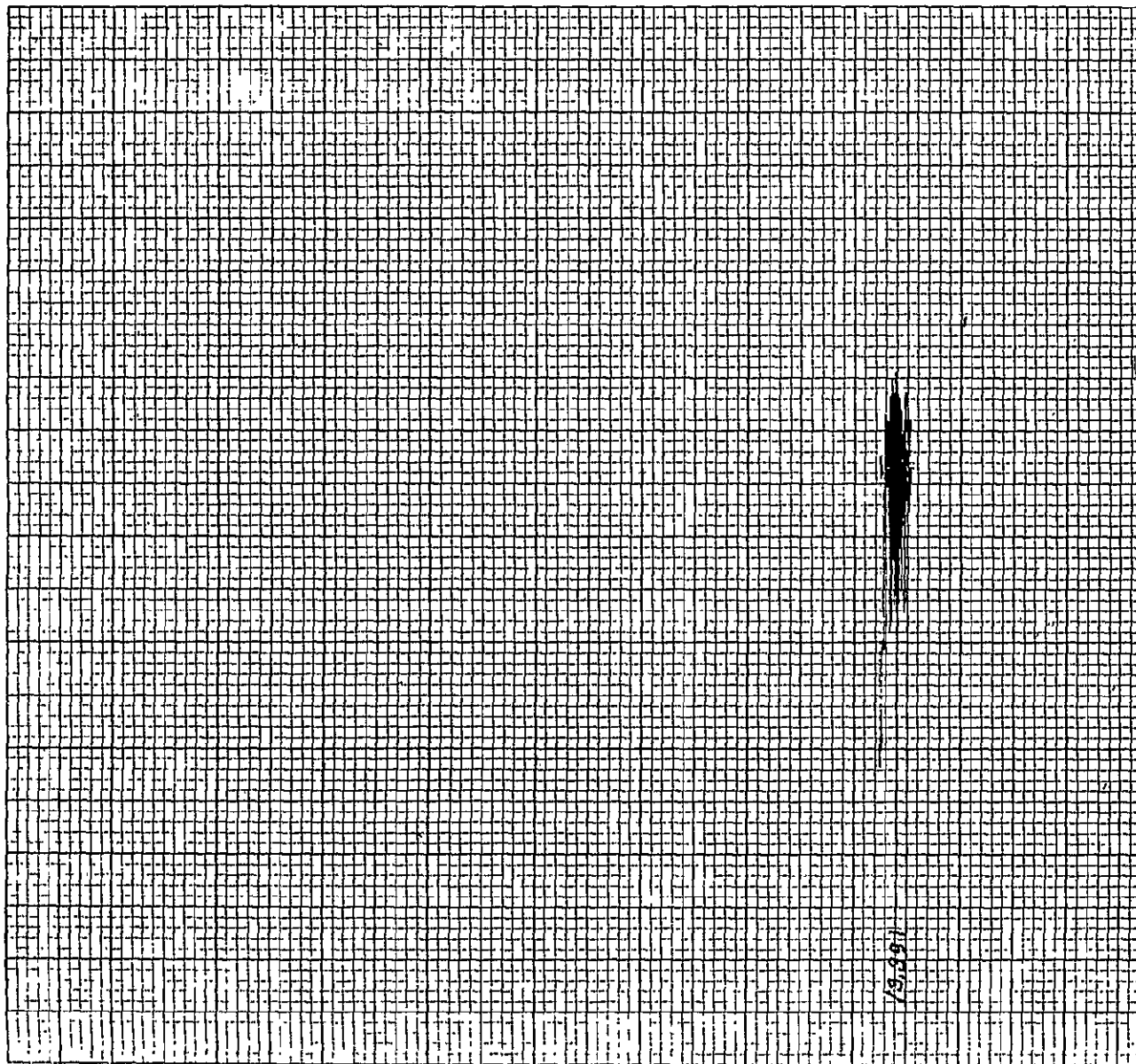
HISTOGRAMS: H- TO H-

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101 AX

1115

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SHAPIRO CONTROLS CORPORATION
BOSTON, MASS.
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DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - : ACOUSTIC - 513	
PLOT IDENTIFICATION: G-632	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

ORIGINAL PAGE 17
OF 1000
QUALITY

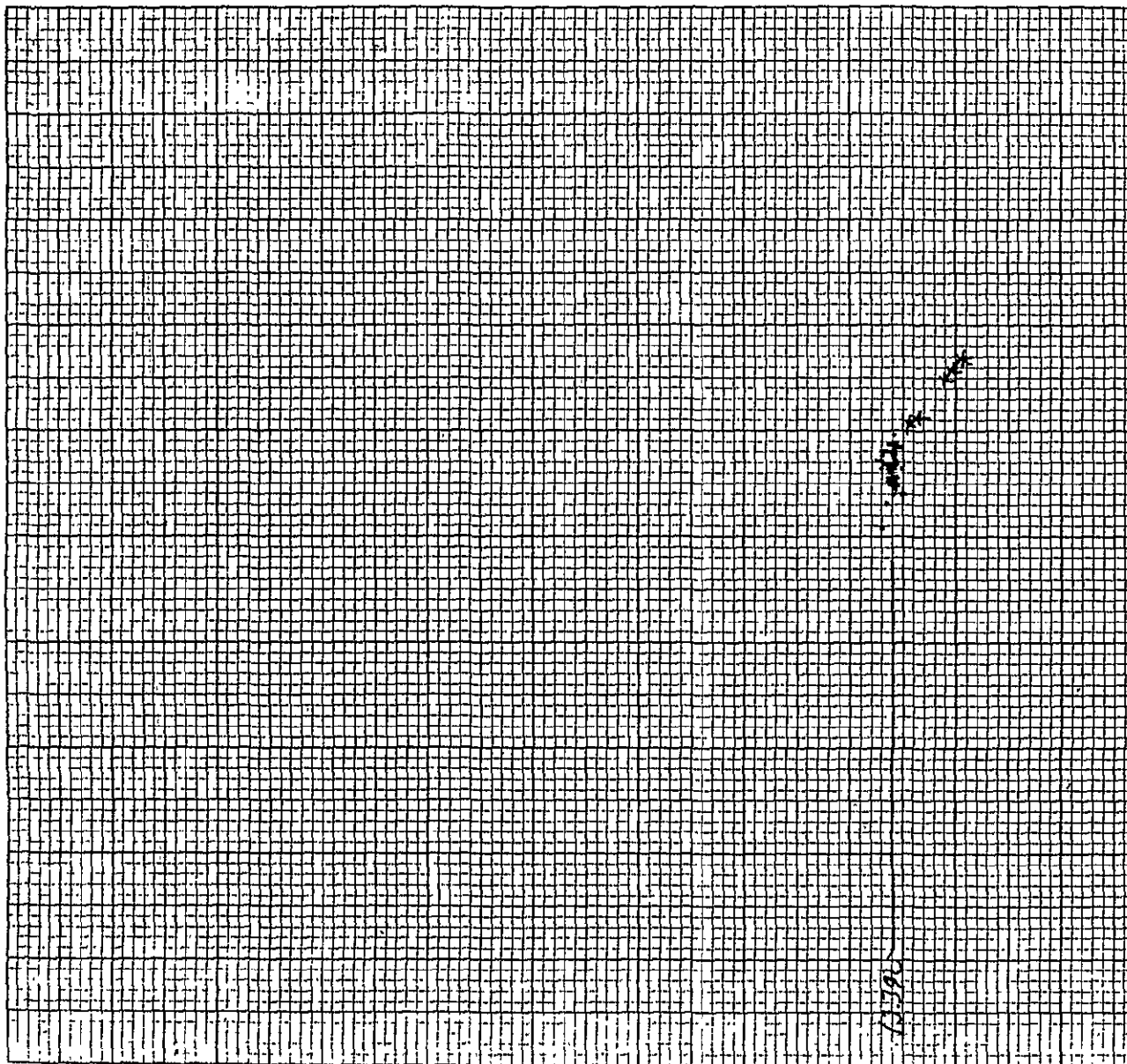
REPEATED ON G634

1155/8/1

NO. XY 101

1116

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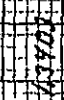
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G - 633	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

REPEATED ON G-635

ORIGINAL PAGE IS
OF POOR QUALITY

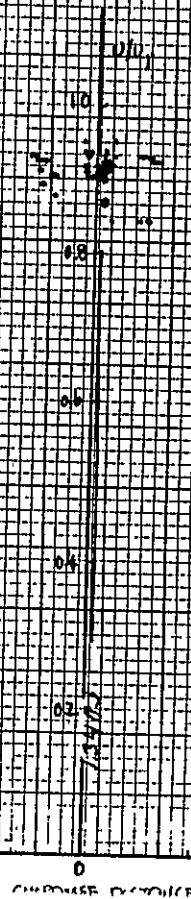
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REPEAT OF E-632



RECORDED CHARTER
NEW YORK STOCK EXCHANGE
INCORPORATED

$P_r = 3.123$, $V_{a/c} = 0$ f/s
 $T_r = 1732$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2424$ f/s, $h = 1.19$ in.



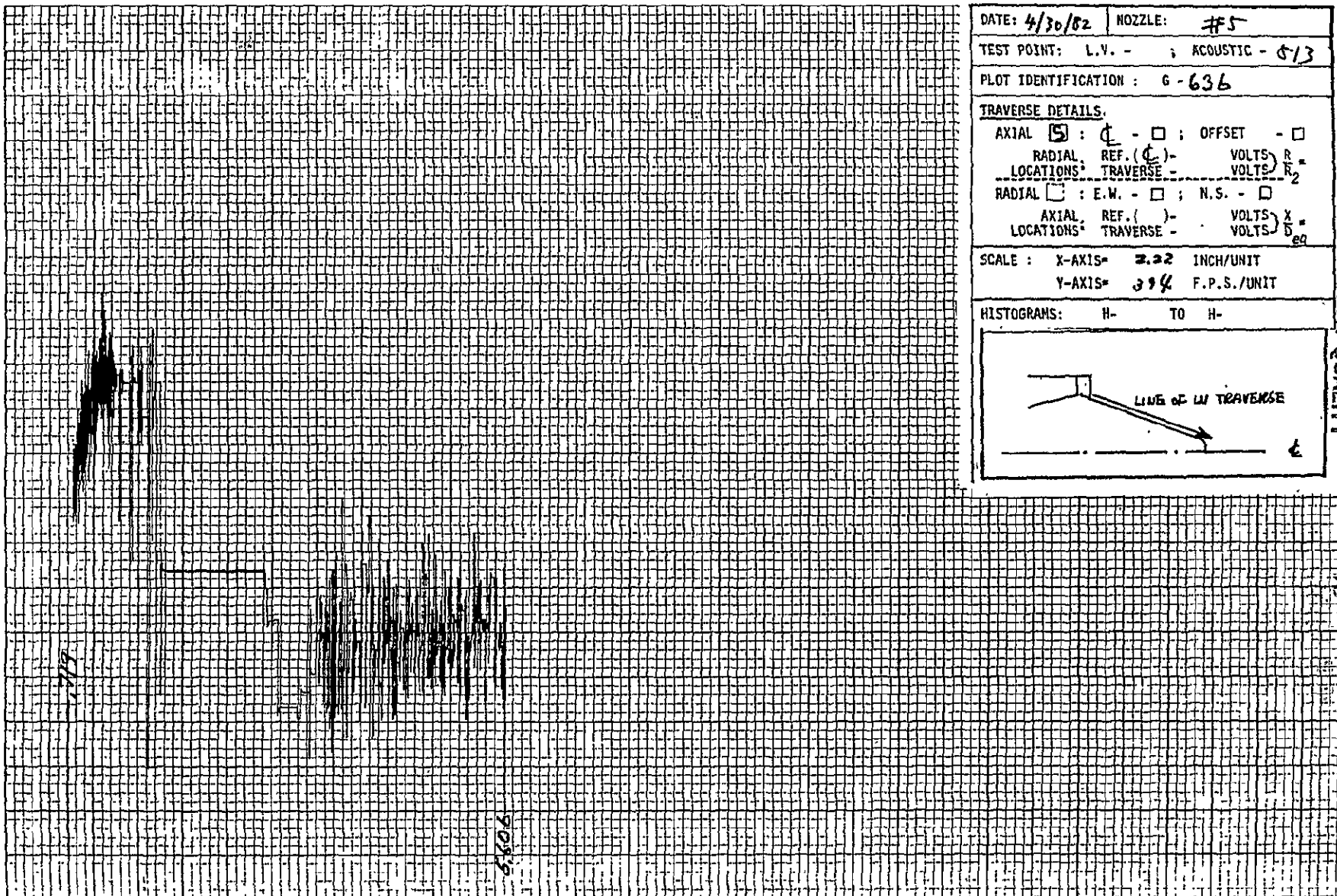
DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G-635	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

REPEAT OF G-633

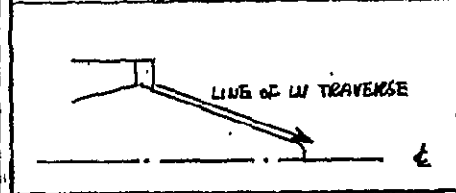
Mo. XY 1101

1119

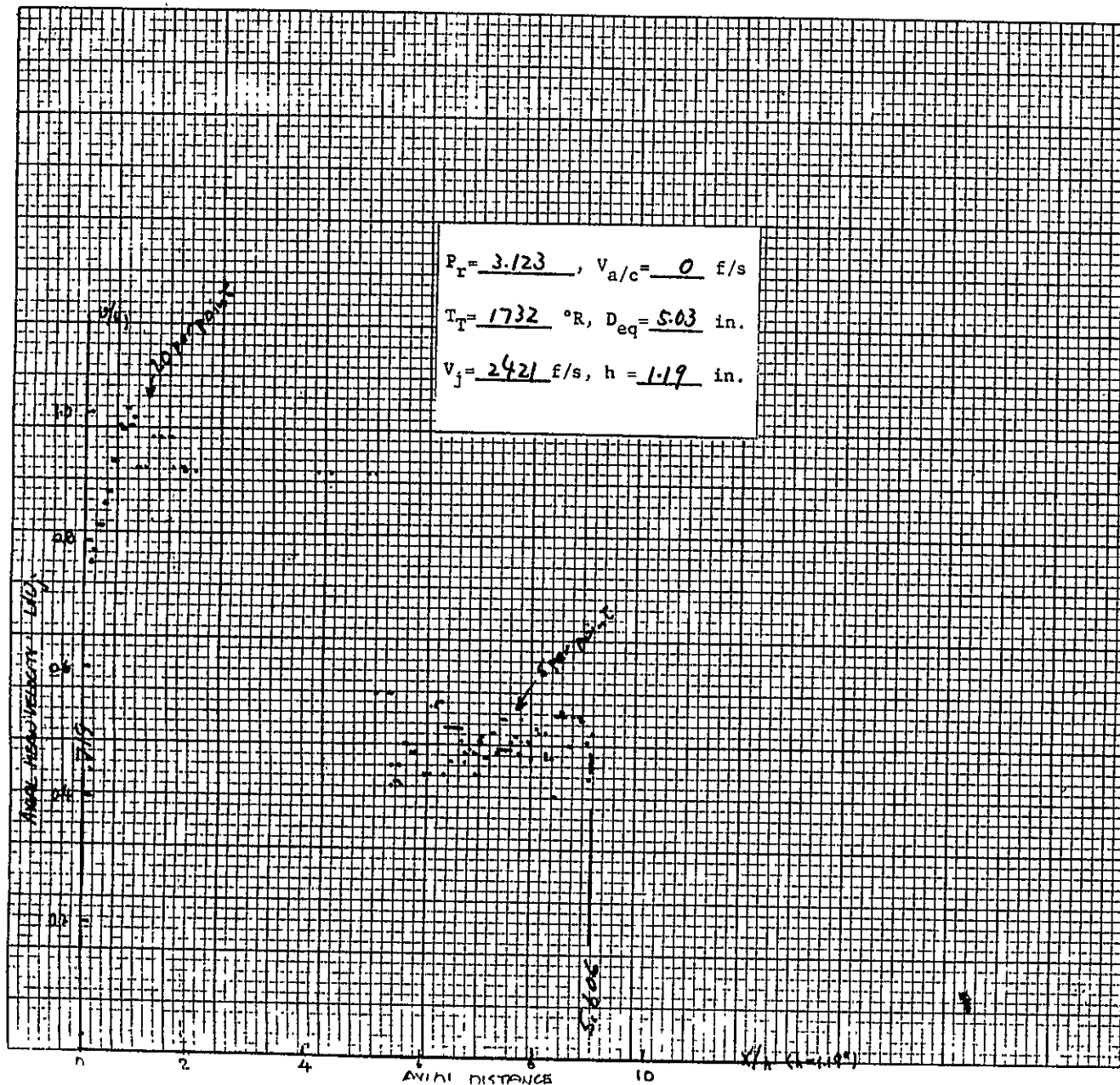
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DATE: 4/30/62	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 513
PLOT IDENTIFICATION: G-636	
TRAVERSE DETAILS:	
AXIAL [S] : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL [] : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS S_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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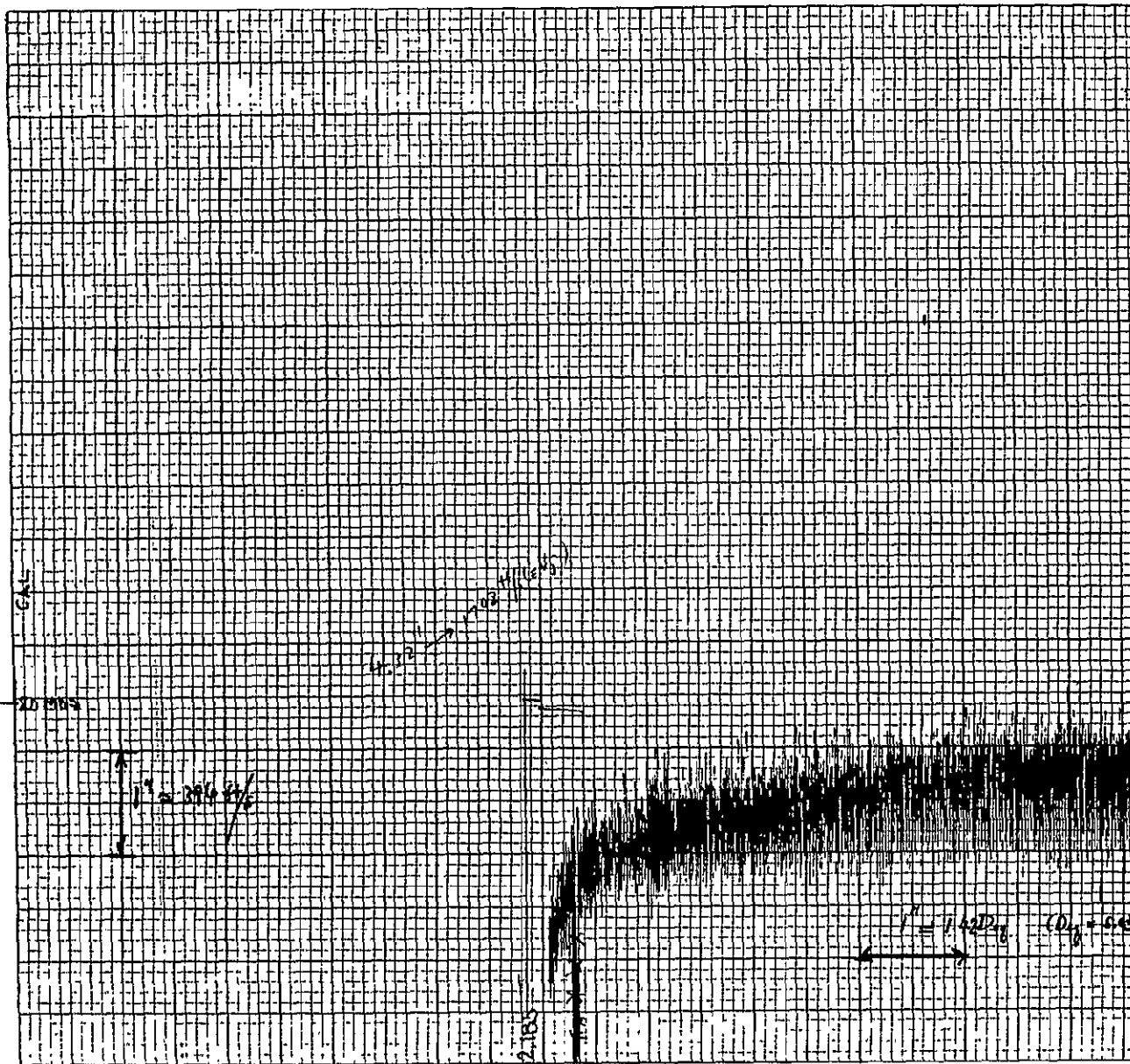


DATE: 4/30/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 513	
PLOT IDENTIFICATION: G-637	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

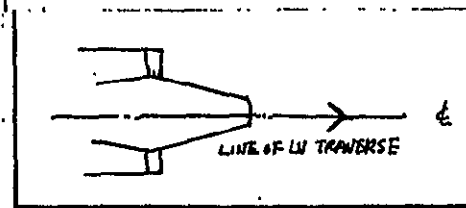
1011 AX No.

1122

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DIVISION
NEW YORK, N.Y.
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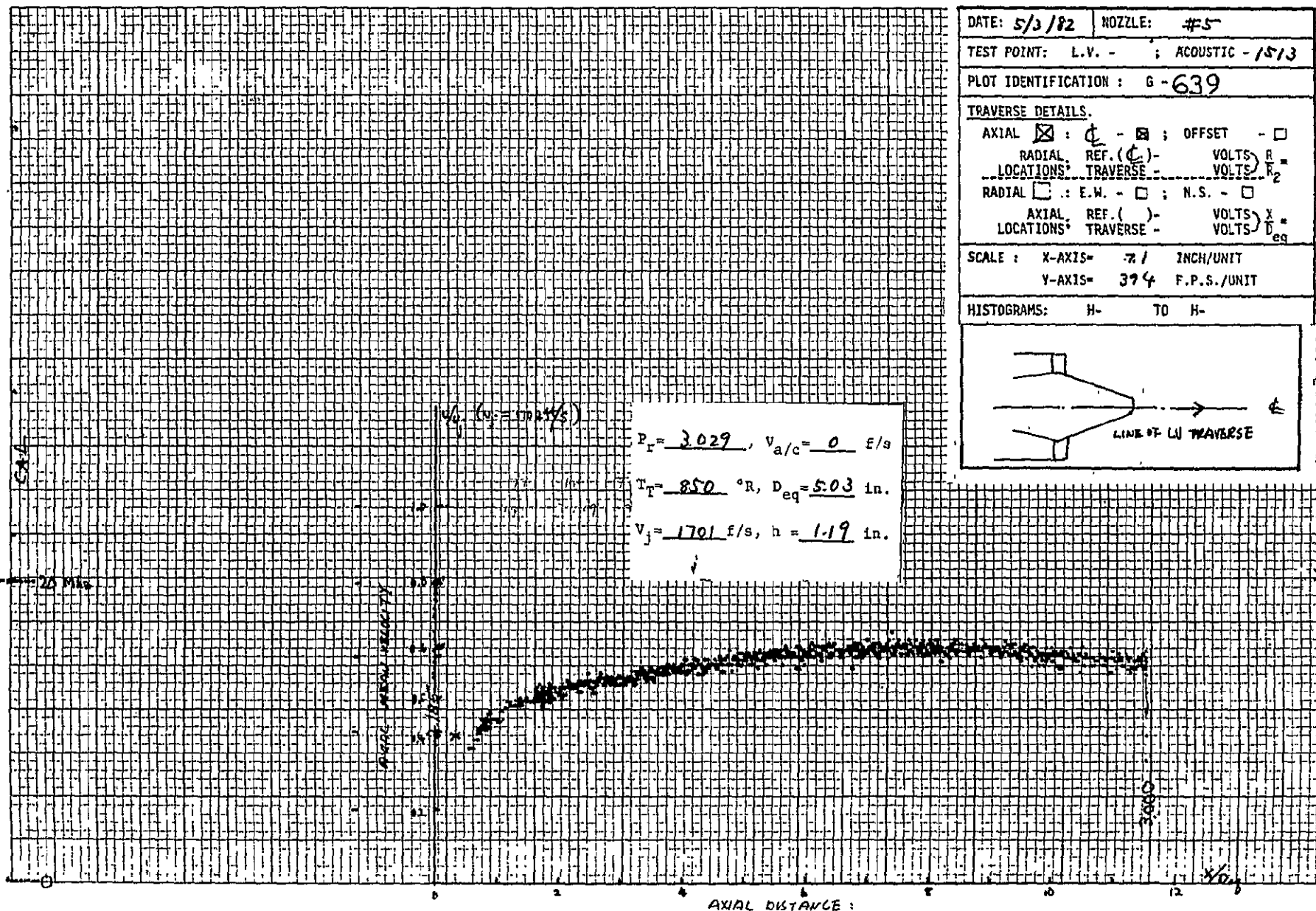
DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1513
PLOT IDENTIFICATION: G-638	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ;	OFFSET - <input type="checkbox"/>
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ;	N.S. - <input type="checkbox"/>
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= .71 INCH/UNIT	
Y-AXIS= 314 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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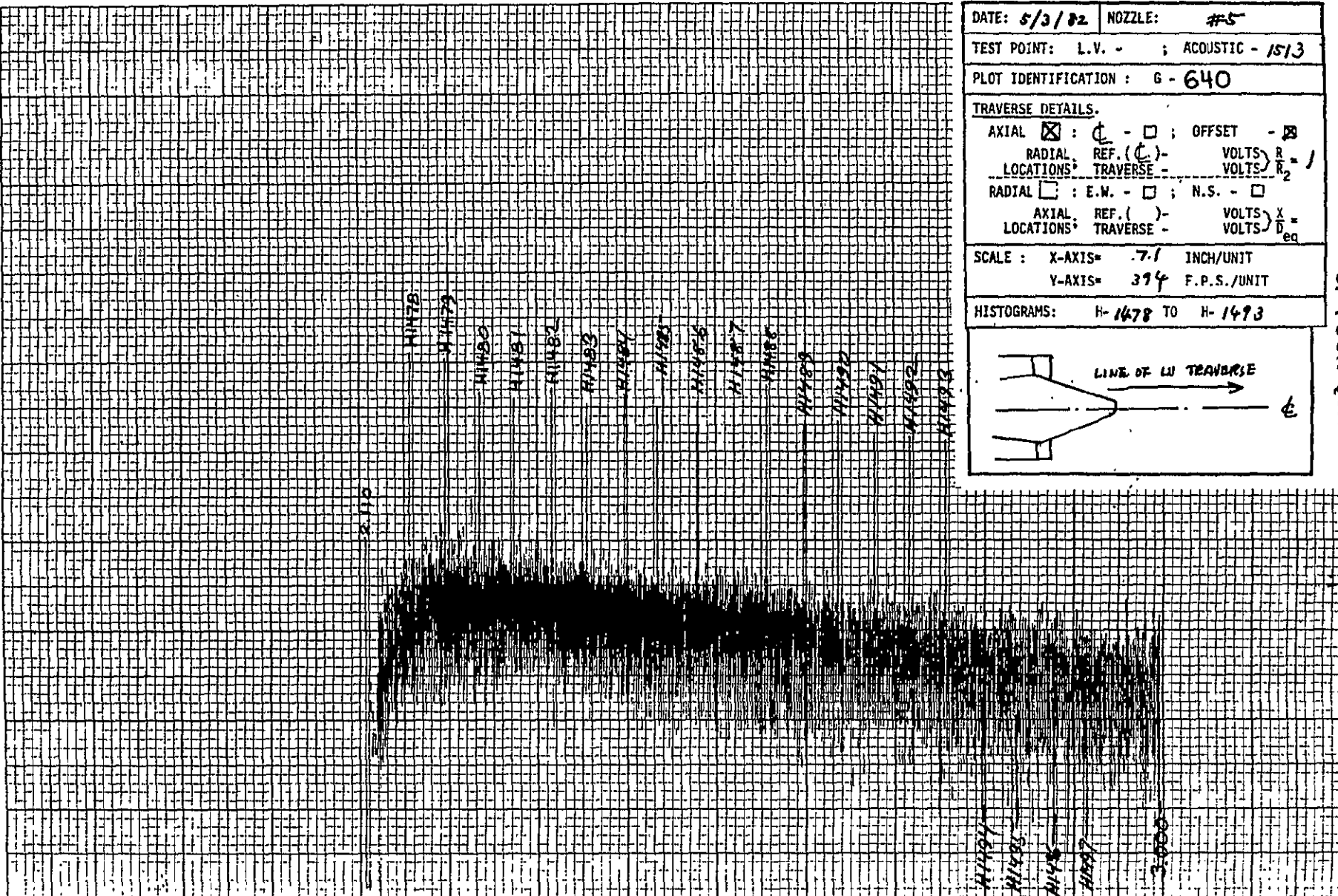
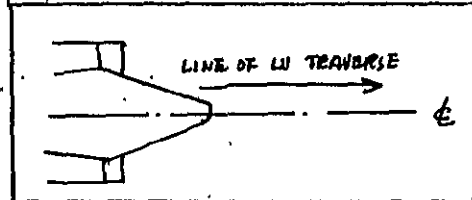
1011 AX NO.

1123
 7-11-62
 AIR FORCE RESEARCH
 LABORATORY
 WRIGHT-PATTERSON
 AIRFIELD
 DAYTON, OHIO

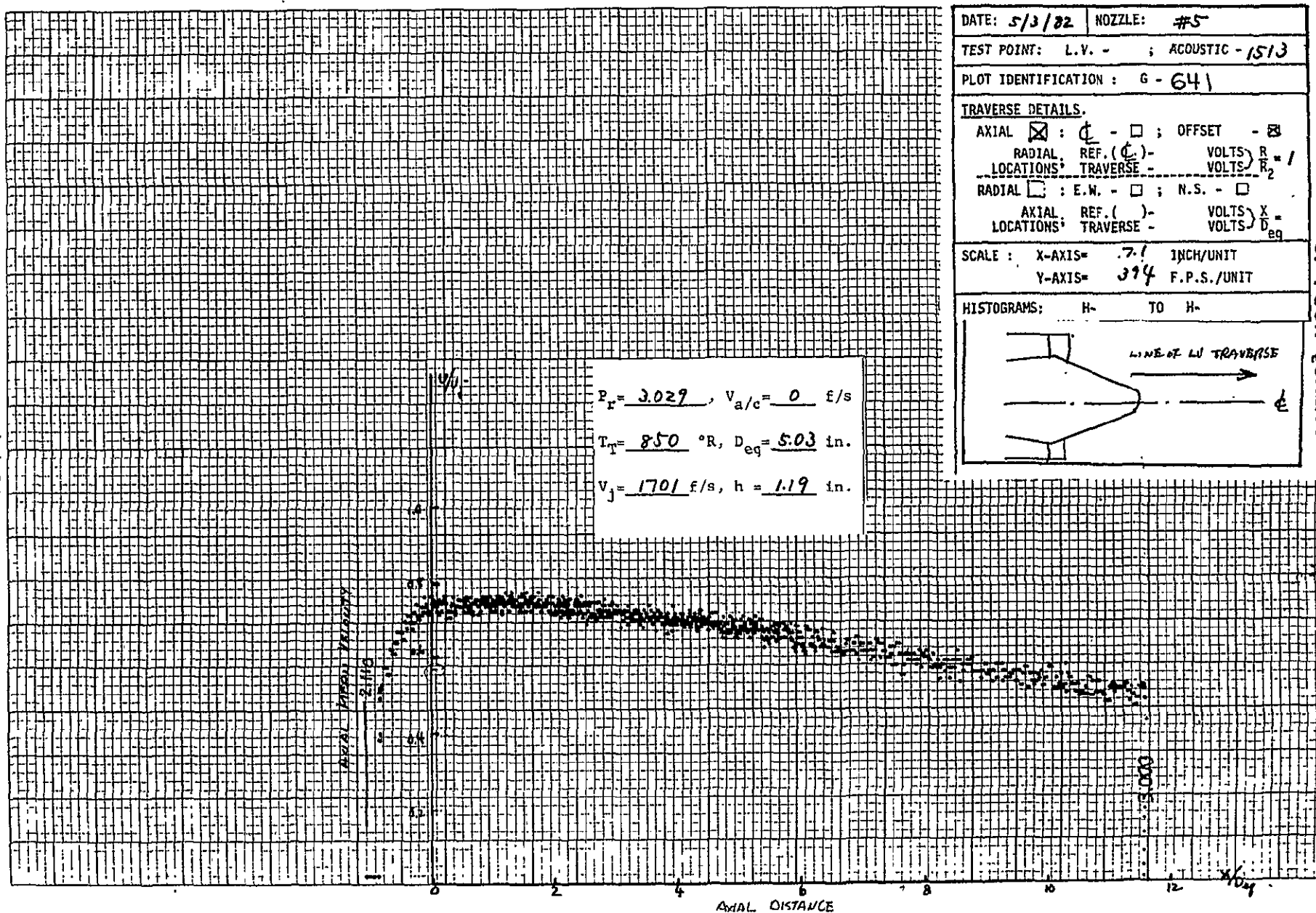


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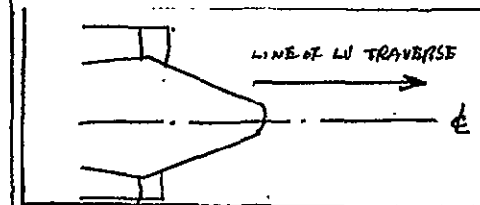
DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1513	
PLOT IDENTIFICATION: G - 640	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $R_2 = 1$	
LOCATIONS: TRAVERSE - VOLTS $R_2 = 1$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $X_D =$	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = .71 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- 1478 TO H- 1493	

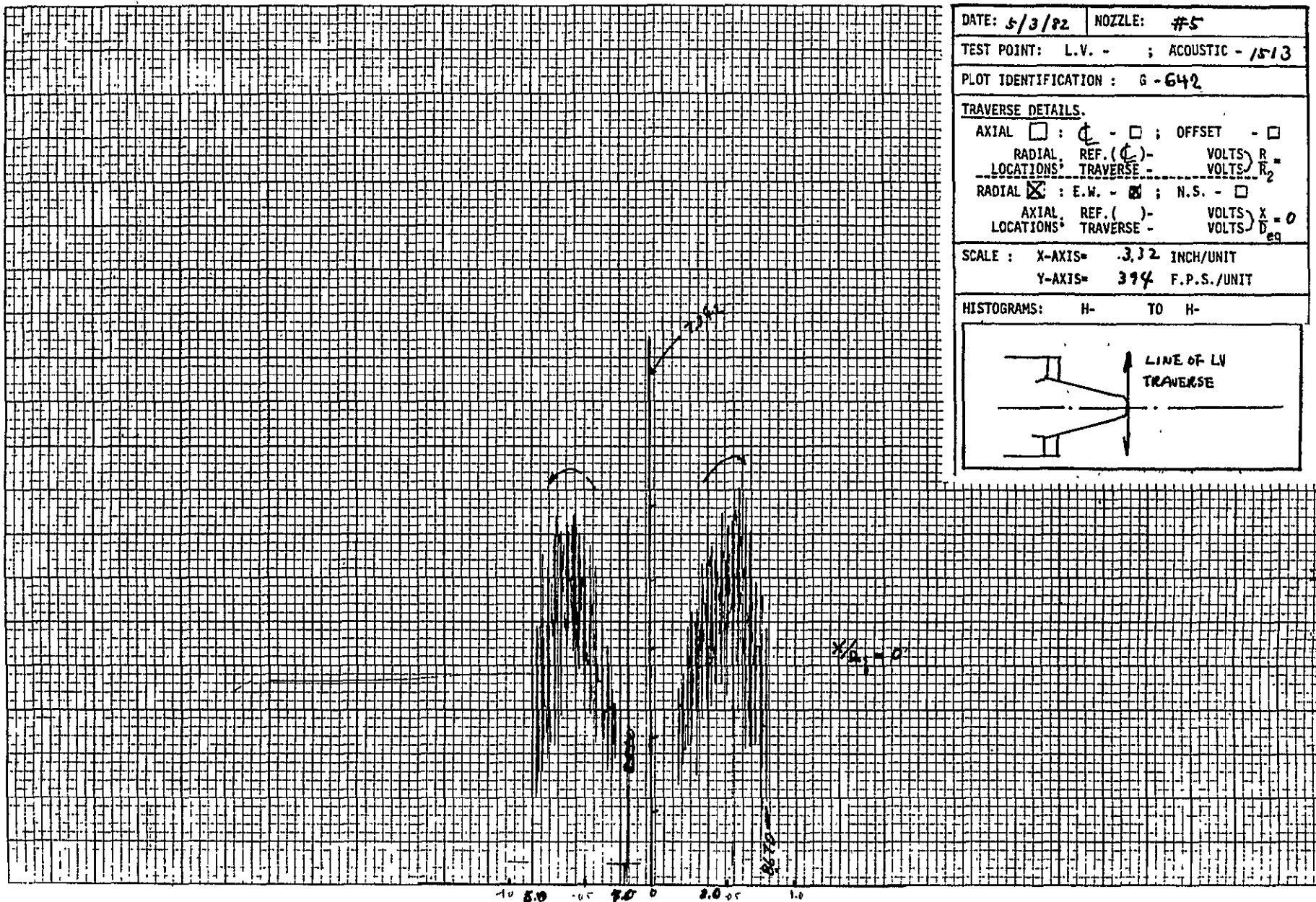


1125



DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1513
PLOT IDENTIFICATION: G-641	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 7.1 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



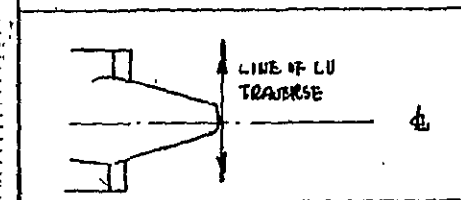


1127

$P_r = 3.029$, $V_{a/c} = 0$ f/s
 $T_T = 850$ °R, $D_{eq} = 5.03$ in.
 $V_j = 1701$ f/s, $h = 1.19$ in.

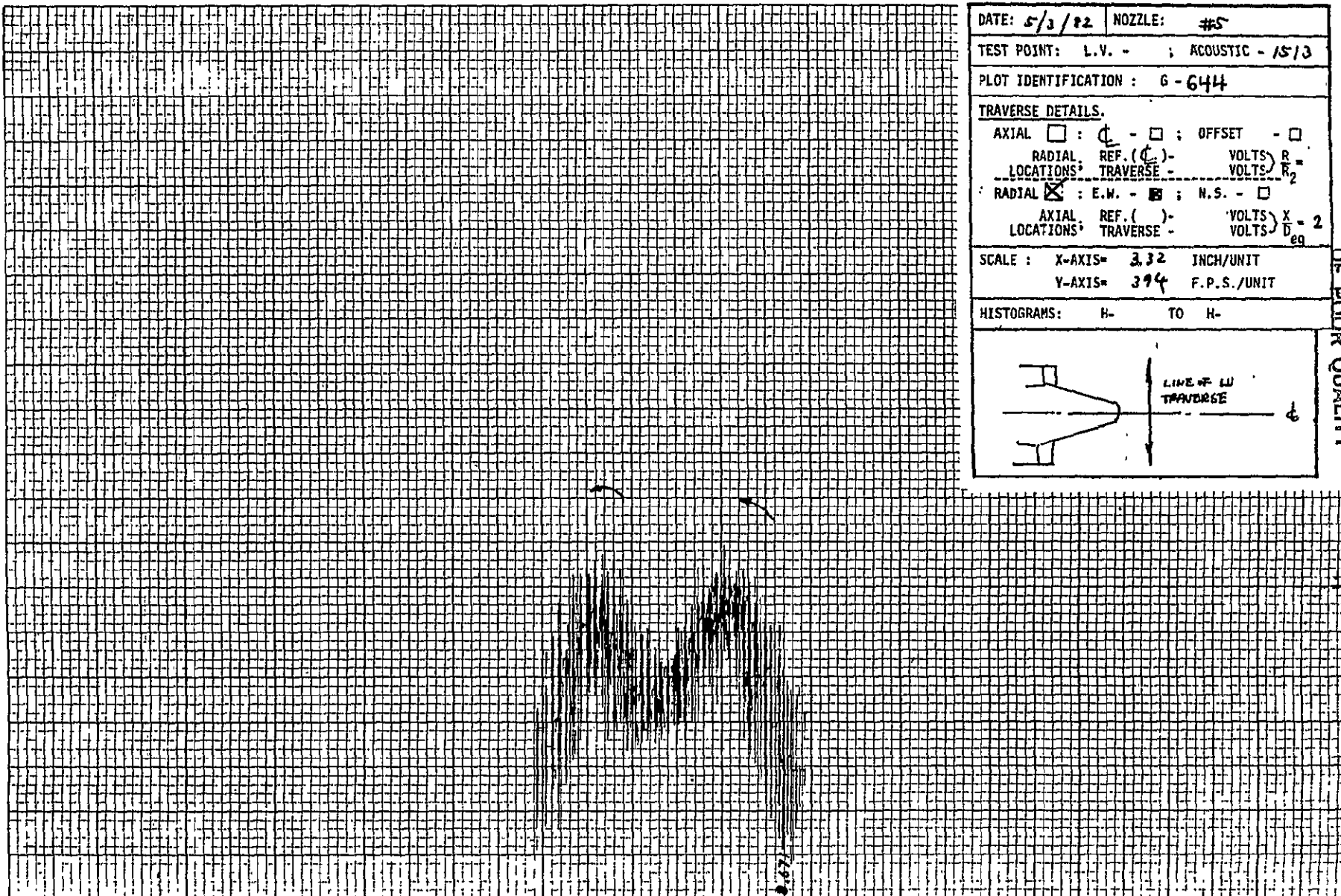
-1.0 0 1.0
 RADIAL DISTANCE $\cdot r/D_{eq}$

DATE: 5/3/52	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 15/3	
PLOT IDENTIFICATION: G-643	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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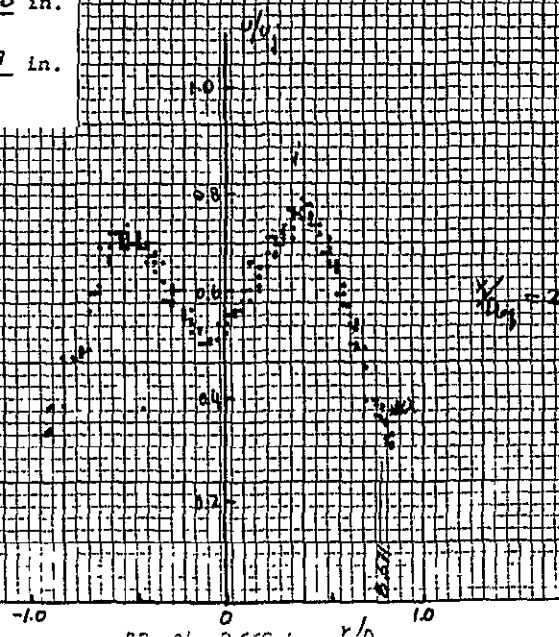
1128



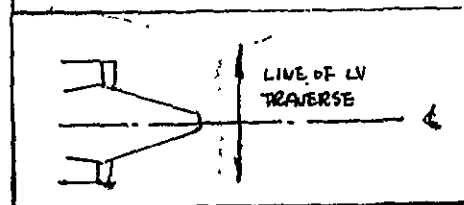
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1129

$P_r = 3.029$, $V_{a/c} = 0$ f/s
 $T_r = 850$ °R, $D_{eq} = 5.03$ in.
 $V_j = 1701$ f/s, $h = 1.19$ in.

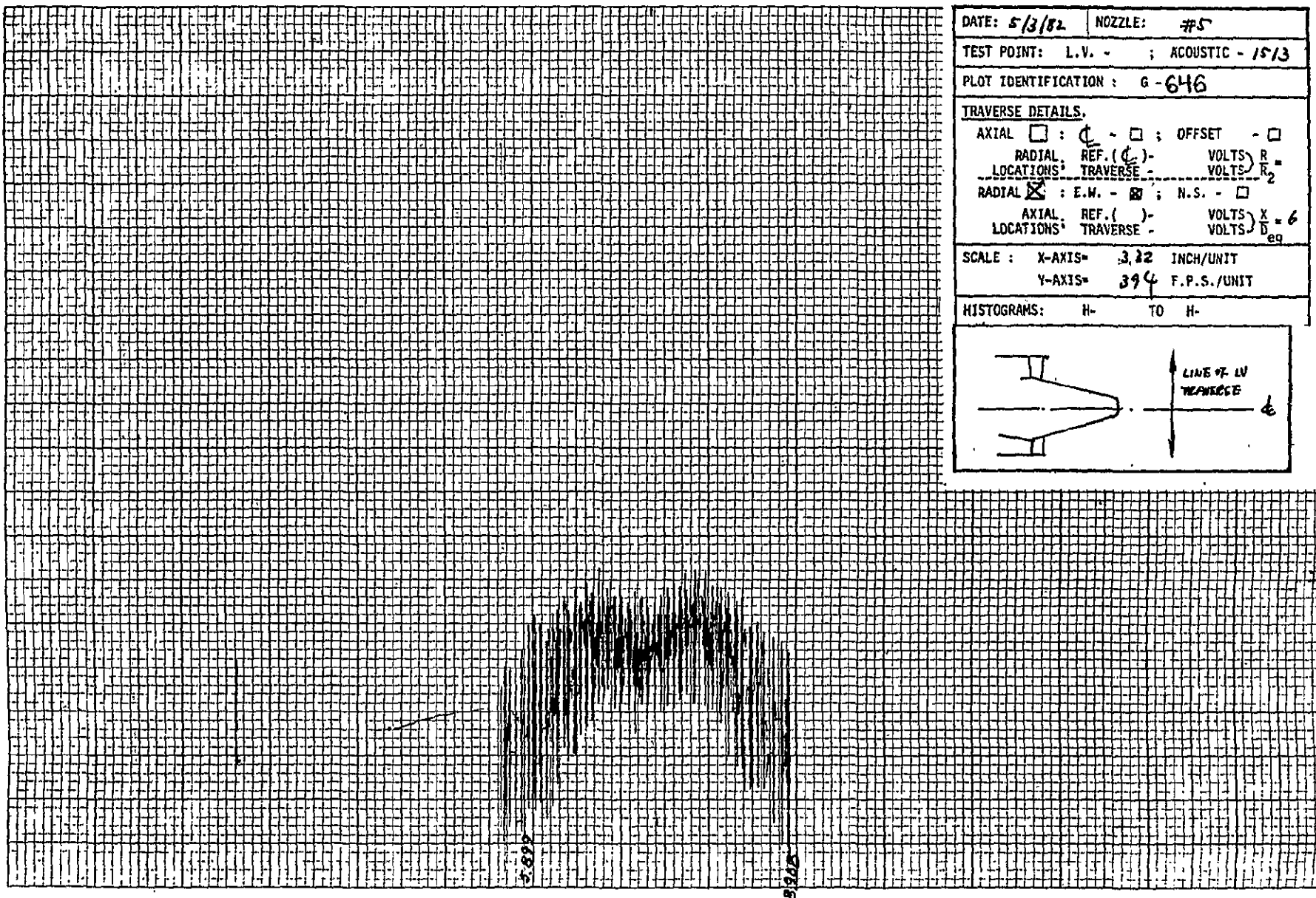


DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1513	
PLOT IDENTIFICATION: G-645	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE -	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE -	
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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1130

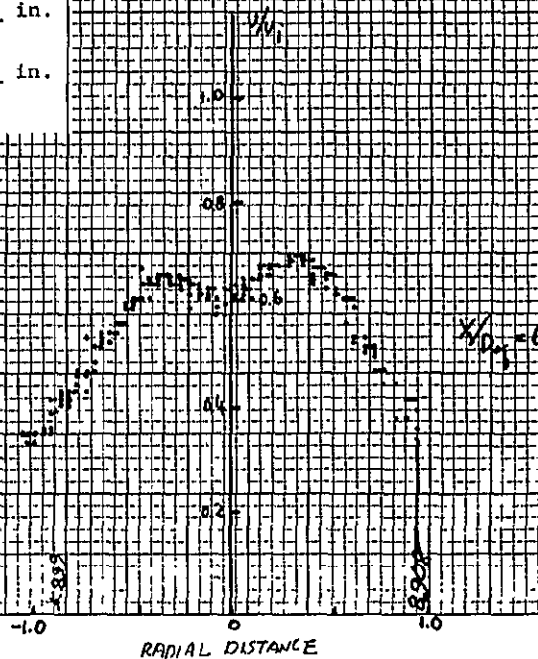


1131

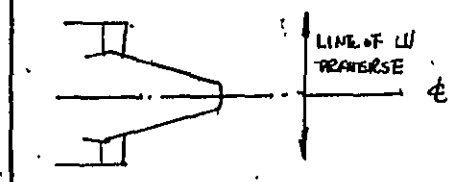
$P_r = 3.029$, $V_{a/c} = 0$ f/s

$T_T = 850$ °R, $D_{eq} = 5.03$ in.

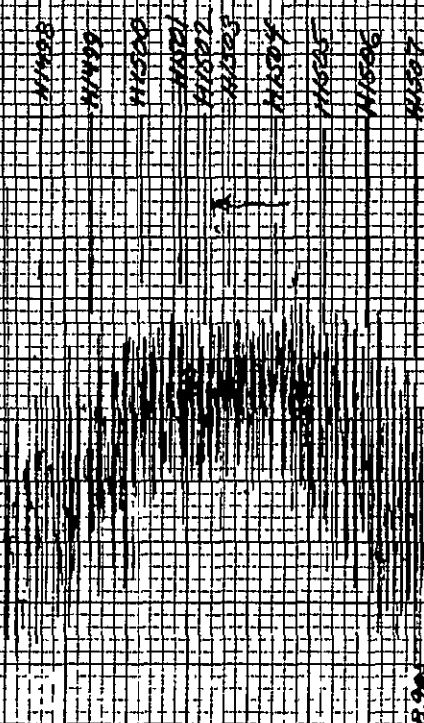
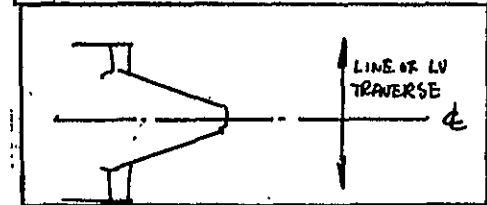
$V_j = 1701$ f/s, $h = 1.19$ in.



DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1513	
PLOT IDENTIFICATION: G-647	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	$X/D_{eq} = 6$
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 5/3/82	NOZZLE: # 5
TEST POINT: L.V. - ; ACOUSTIC - 1513	
PLOT IDENTIFICATION: G-648	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1498 TO H-1507	



1011 AX No.

1132

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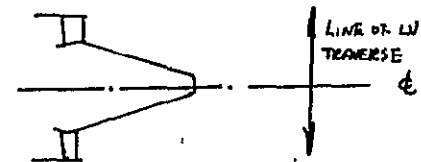
1133

RECORDED CHARTS
CAMAC CONTROL SYSTEMS CORPORATION
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PRINTED IN U.S.A.

$P_r = 3.029$, $V_{a/c} = 0$ f/s
 $T_r = 850$ °R, $D_{eq} = 5.03$ in.
 $V_j = 1701$ f/s, $h = 1.19$ in.

-1.0 0 1.0
r/h

DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1513	
PLOT IDENTIFICATION: G-649	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



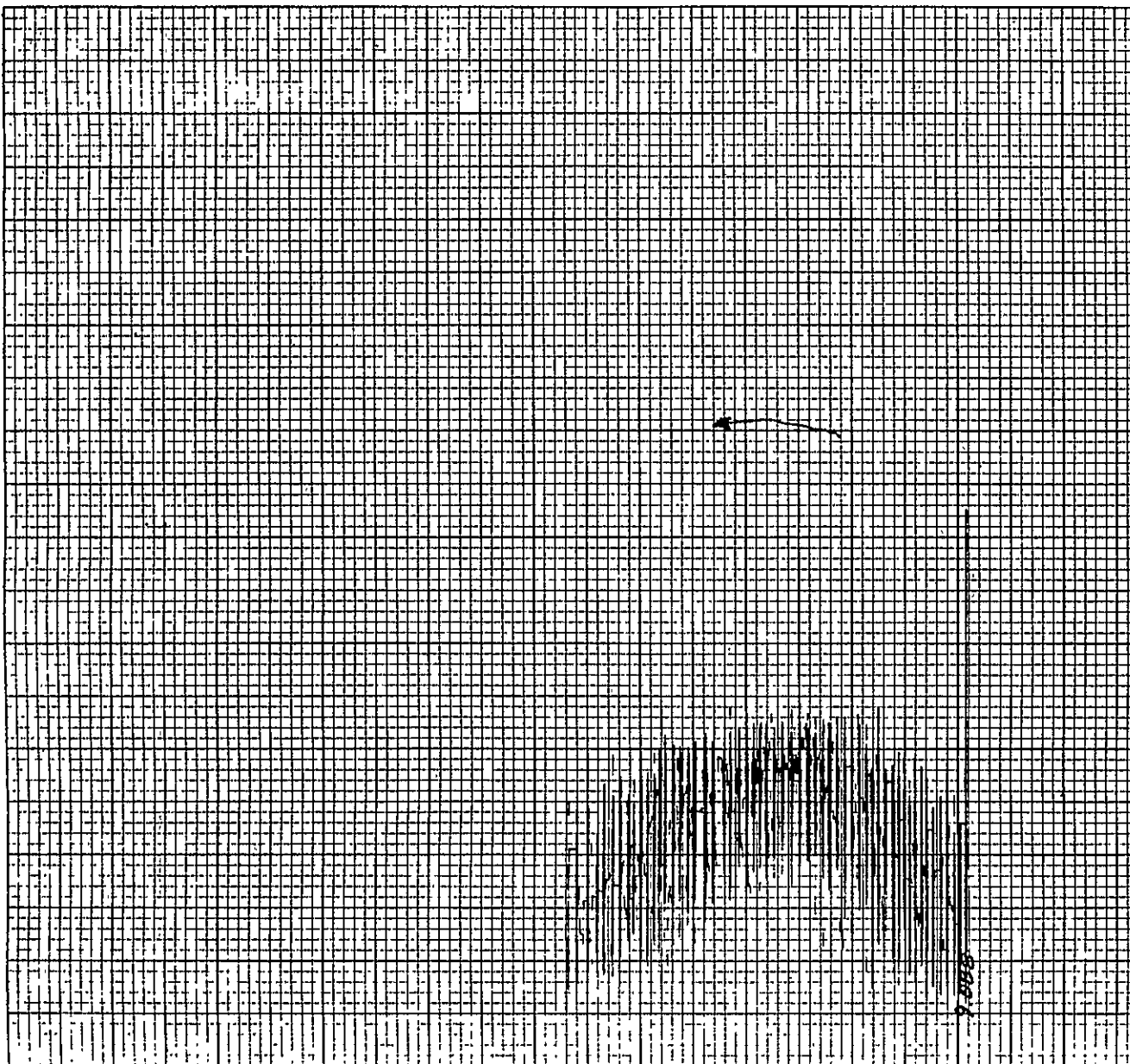
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1011 AX No.

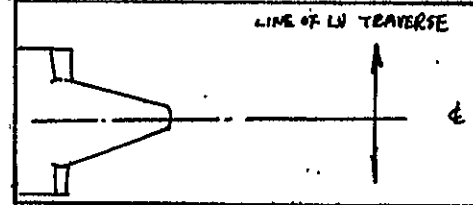
1134

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DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 15/3
PLOT IDENTIFICATION: G - 650	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ;	OFFSET - <input type="checkbox"/>
RADIAL REF. (ϕ) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ;	N.S. - <input type="checkbox"/>
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

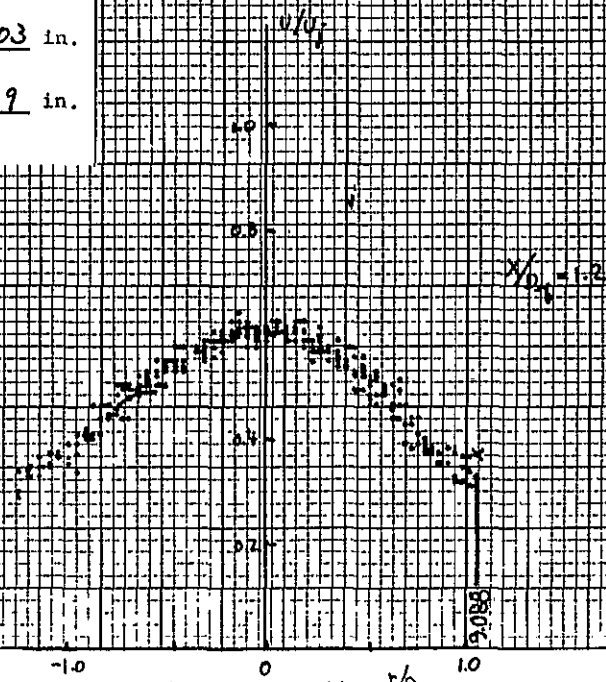


1135

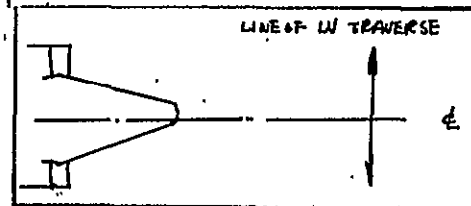
$$P_r = 3.029, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 850^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 170 \text{ f/s}, h = 1.19 \text{ in.}$$

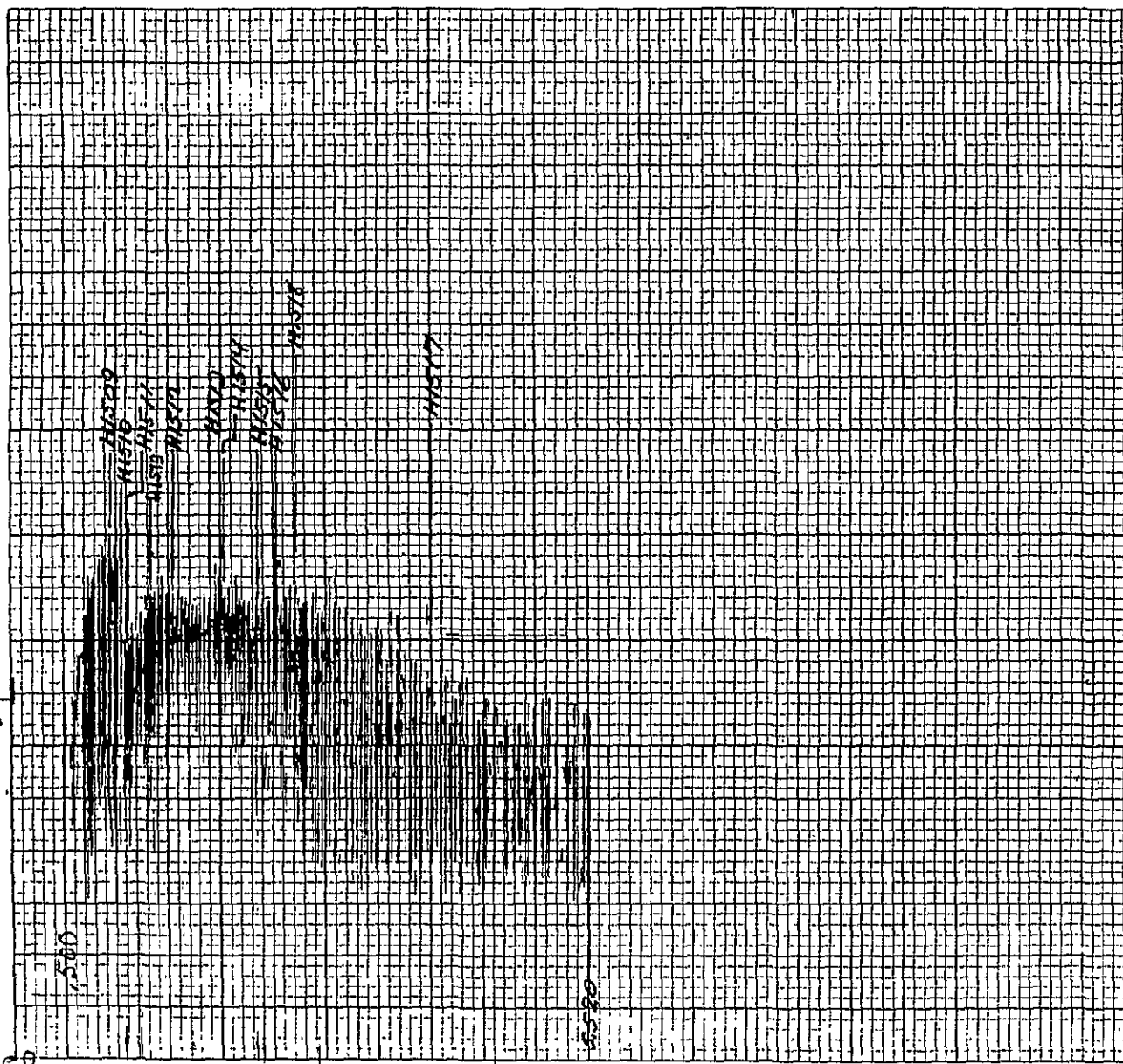


DATE: 5/3/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1513	
PLOT IDENTIFICATION: G - 651	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	$= 12$
SCALE : X-AXIS= 3.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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BUFFALO NEW YORK

1135



DATE: 5/4/82 NOZZLE: # 5

TEST POINT: L.V. - ; ACOUSTIC - 1513

PLOT IDENTIFICATION: G - 652

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS) R_1

LOCATIONS: TRAVERSE - VOLTS) R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

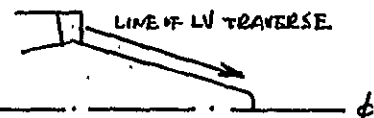
AXIAL REF. () - VOLTS) X

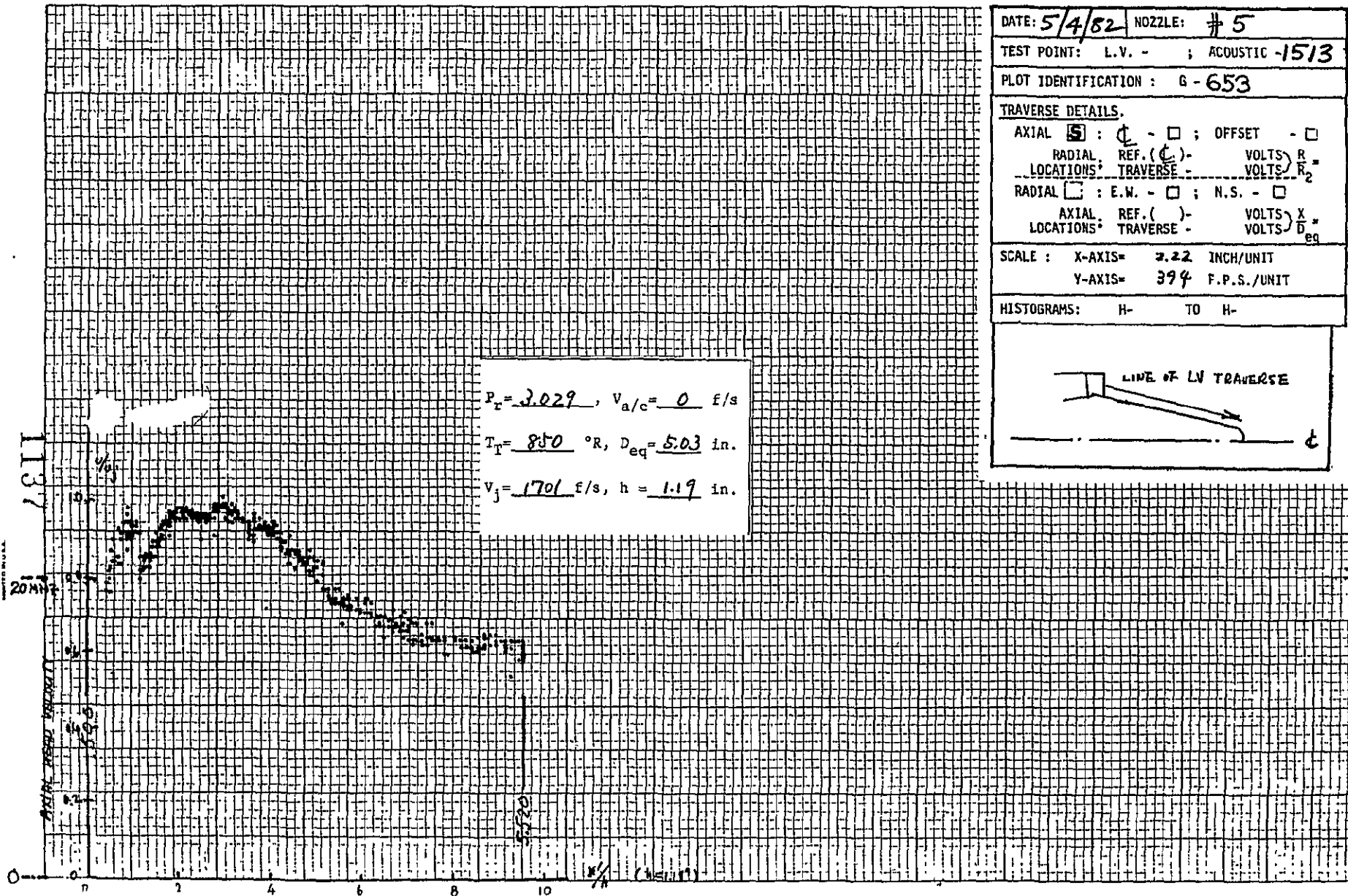
LOCATIONS: TRAVERSE - VOLTS) D_{eq}

SCALE : X-AXIS = : INCH/UNIT

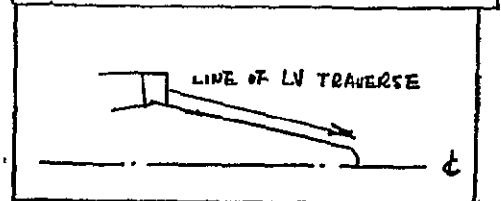
Y-AXIS = 314 F.P.S./UNIT

HISTOGRAMS: H-1509 TO H-1519



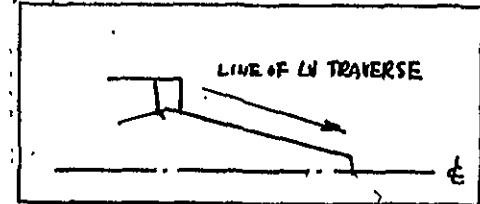


DATE: 5/4/82 NOZZLE: # 5
 TEST POINT: L.V. - ; ACOUSTIC -1513
 PLOT IDENTIFICATION: G-653
 TRAVERSE DETAILS:
 AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐
 RADIAL REF. (☒) - VOLTS $\frac{R}{R_2}$
 LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$
 LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$
 SCALE: X-AXIS= 2.22 INCH/UNIT
 Y-AXIS= 394 F.P.S./UNIT
 HISTOGRAMS: H- TO H-



1138

DATE: 5/4/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC -1513
PLOT IDENTIFICATION: G-654	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= .394 F.P.S./UNIT	
HISTOGRAMS: H-1520 TO H-1537	

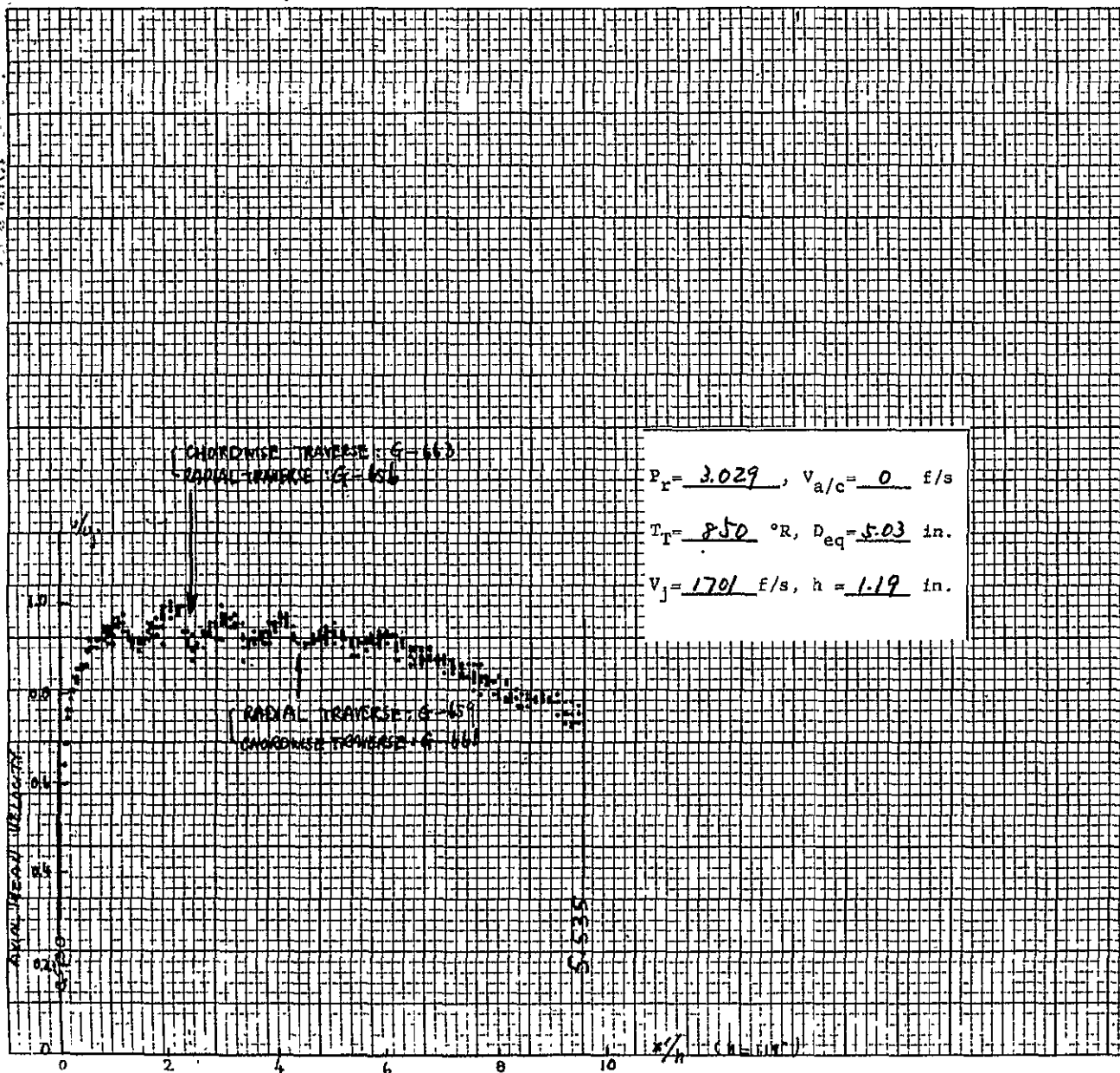


1011 AX NO.

1139

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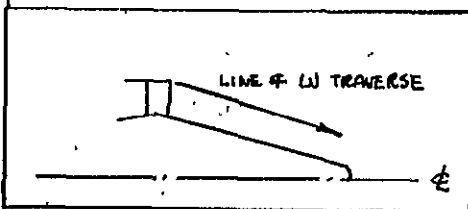


$$P_r = 3.029, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 850^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1701 \text{ f/s}, h = 1.19 \text{ in.}$$

DATE: 5/4/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC - 15/3
PLOT IDENTIFICATION: G - 655	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



1011 AX 700

1140

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DATE: 5/4/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC - 1513
PLOT IDENTIFICATION: G-656	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eg}}$
LOCATIONS TRAVERSE -	
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

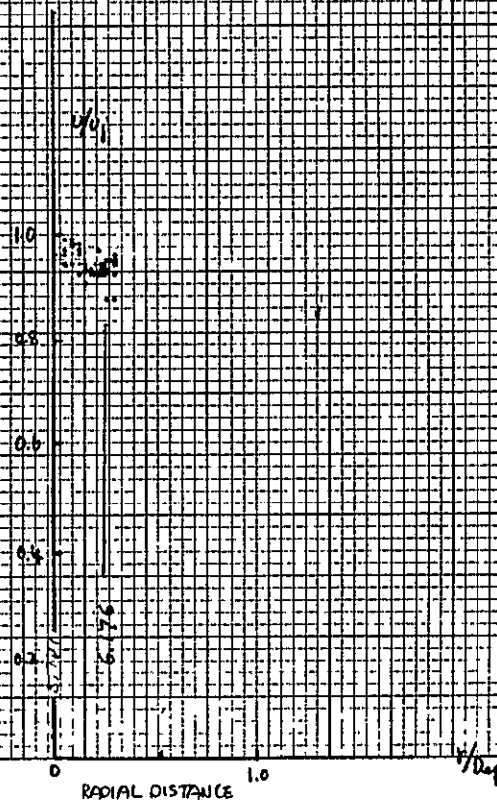


2419

$$P_r = 3.029, V_{a/c} = 0 \text{ f/s}$$

$$T_T = 850^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1701 \text{ f/s}, h = 1.19 \text{ in.}$$



DATE: 5/4/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1513

PLOT IDENTIFICATION: G-657

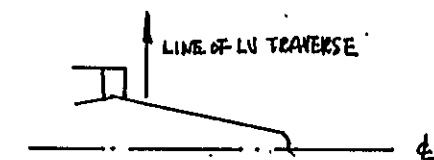
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.32 INCH/UNIT

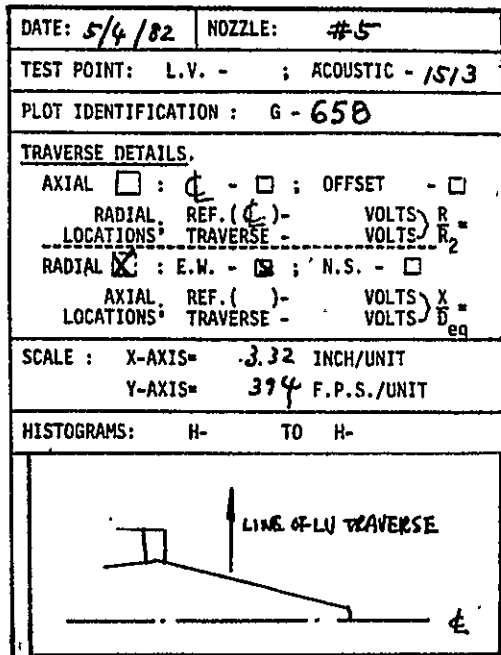
Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

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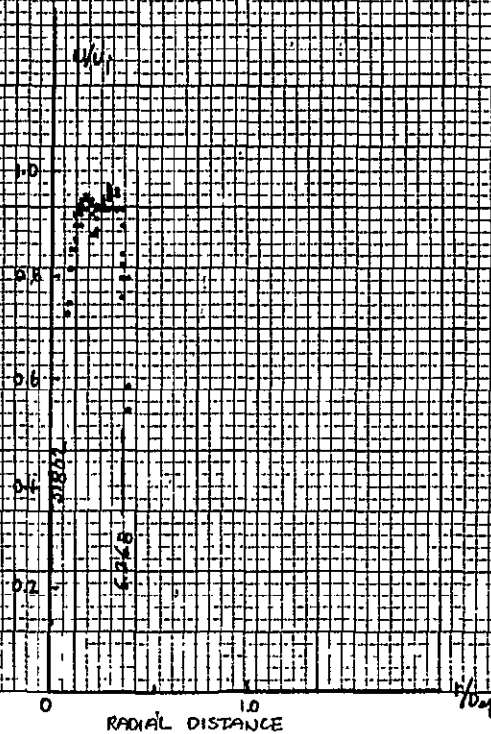
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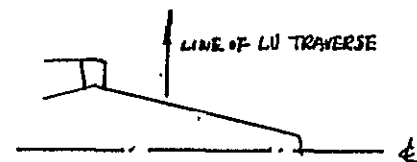
$$P_r = \underline{3.029}, v_{a/c} = \underline{0} \text{ f/s}$$

$$T_T = \underline{850} \text{ } ^\circ\text{R}, D_{eq} = \underline{5.03} \text{ in.}$$

$$V_j = \underline{1701} \text{ f/s}, h = \underline{1.19} \text{ in.}$$



DATE: <u>5/4/82</u>	NOZZLE: <u>#5</u>
TEST POINT: L.V. - ; ACOUSTIC - <u>15/3</u>	
PLOT IDENTIFICATION : <u>G - 659</u>	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= <u>3.32</u> INCH/UNIT	
Y-AXIS= <u>394</u> F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 5/4/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 15/3

PLOT IDENTIFICATION: G - 660

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

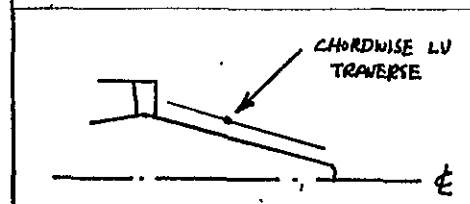
RADIAL ☒ : E.W. - ☐ ; N.S. - ☒

AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= .332 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



1011 AX NO.

1144

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1145

$$P_r = 3.029, V_{a/c} = 0 \text{ f/s}$$

$$T_r = 850^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1701 \text{ f/s}, h = 1.19 \text{ in.}$$

DATE: 5/4/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1513

PLOT IDENTIFICATION: G-661

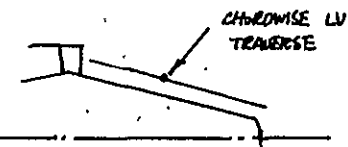
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☐ ; N.S. - ☒AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 5/4/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1513

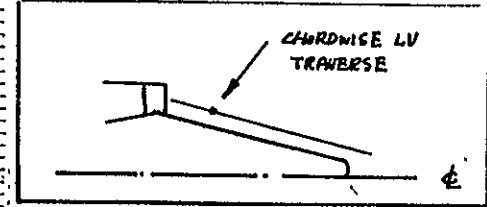
PLOT IDENTIFICATION: G-662

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS TRAVERSE - VOLTS R_2
 RADIAL ☒ : E.W. - ☐ ; N.S. - ☒
 AXIAL REF. () - VOLTS X
 LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 3.32 INCH/UNIT
 Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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e

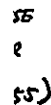
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1146

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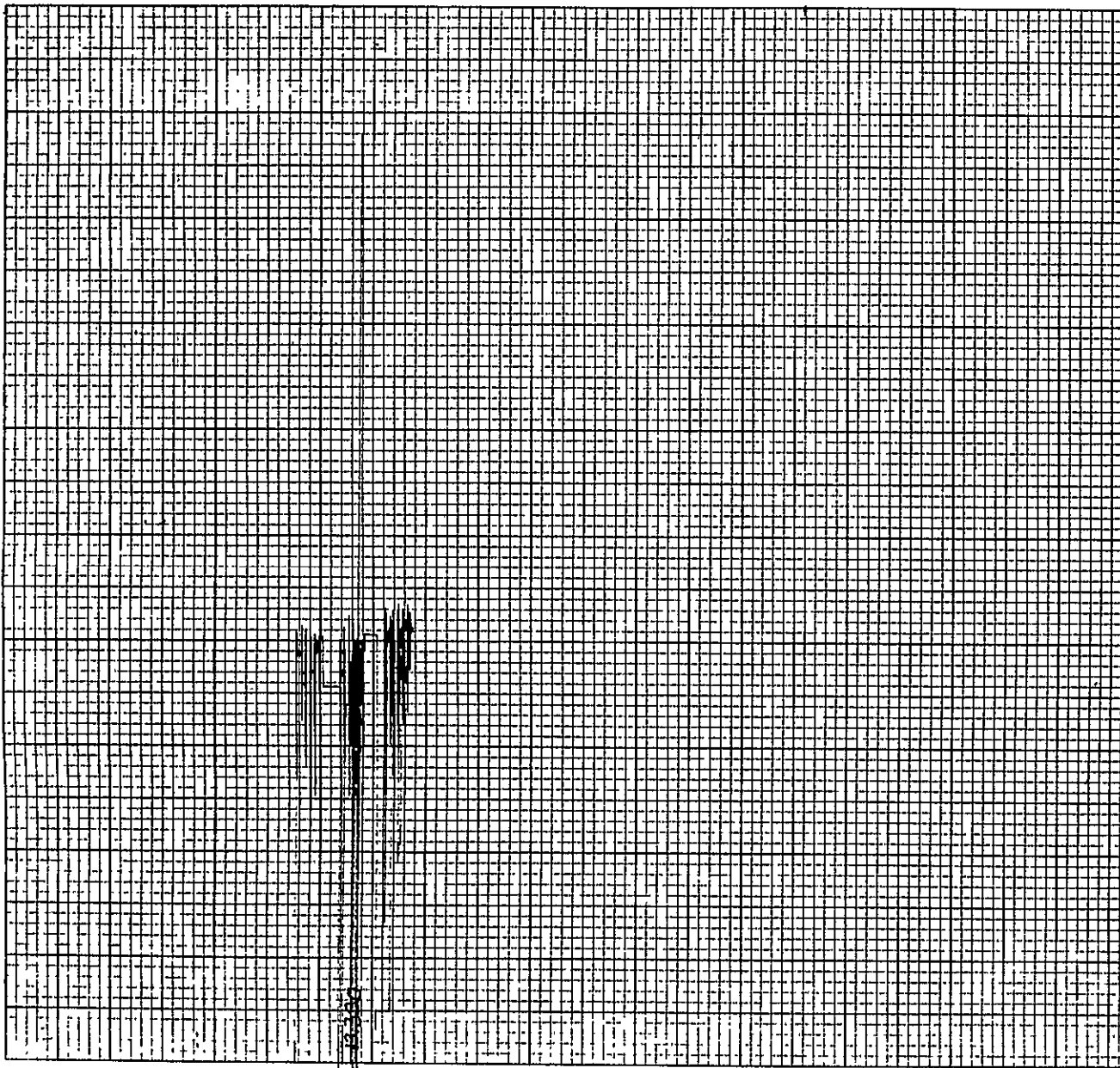


1011 AX No.

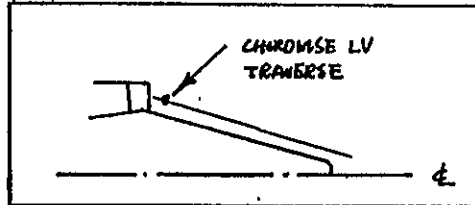
1148

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DATE: 5/4/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 15/3	
PLOT IDENTIFICATION: G-664	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

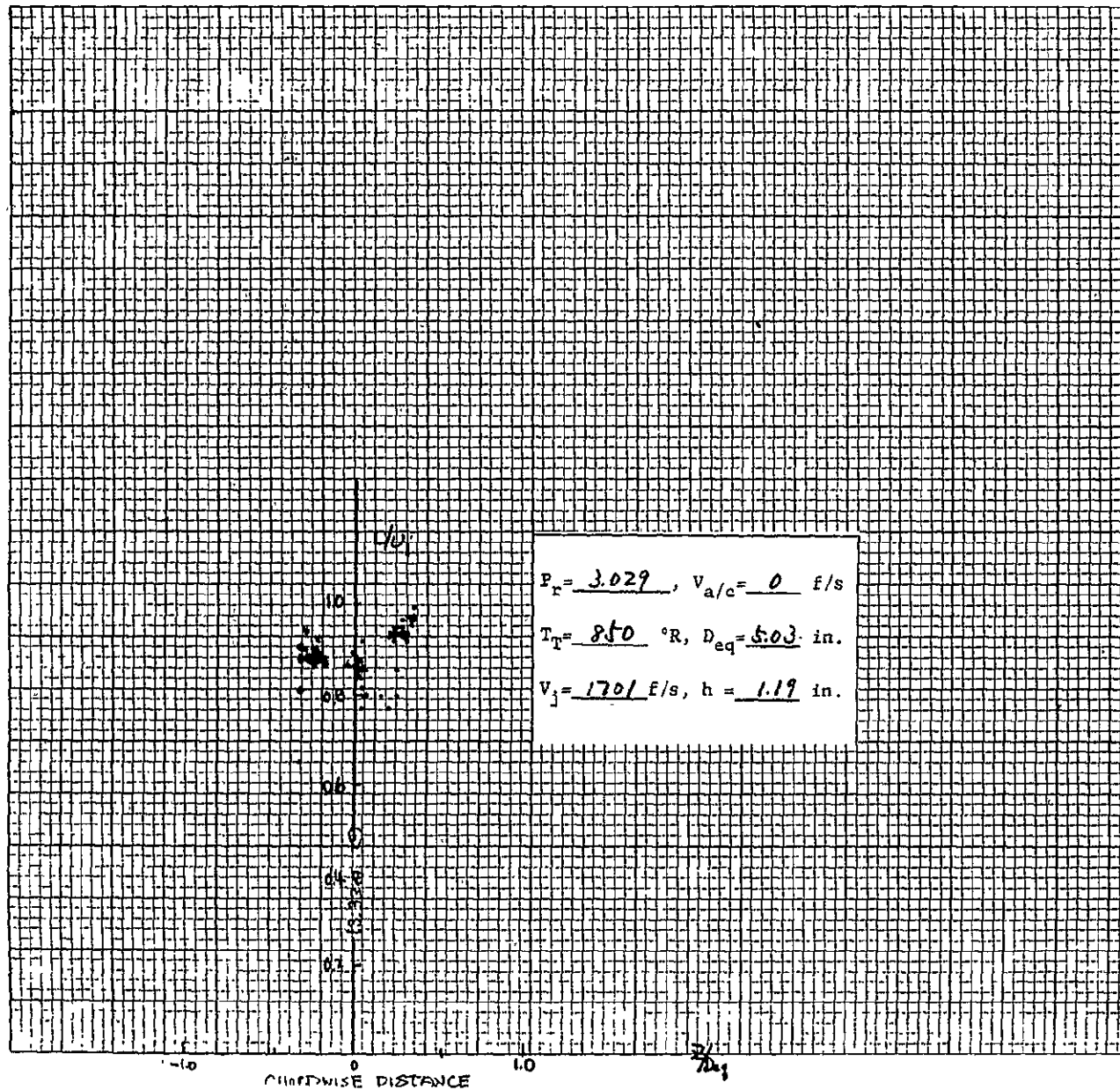


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1011 AX ON

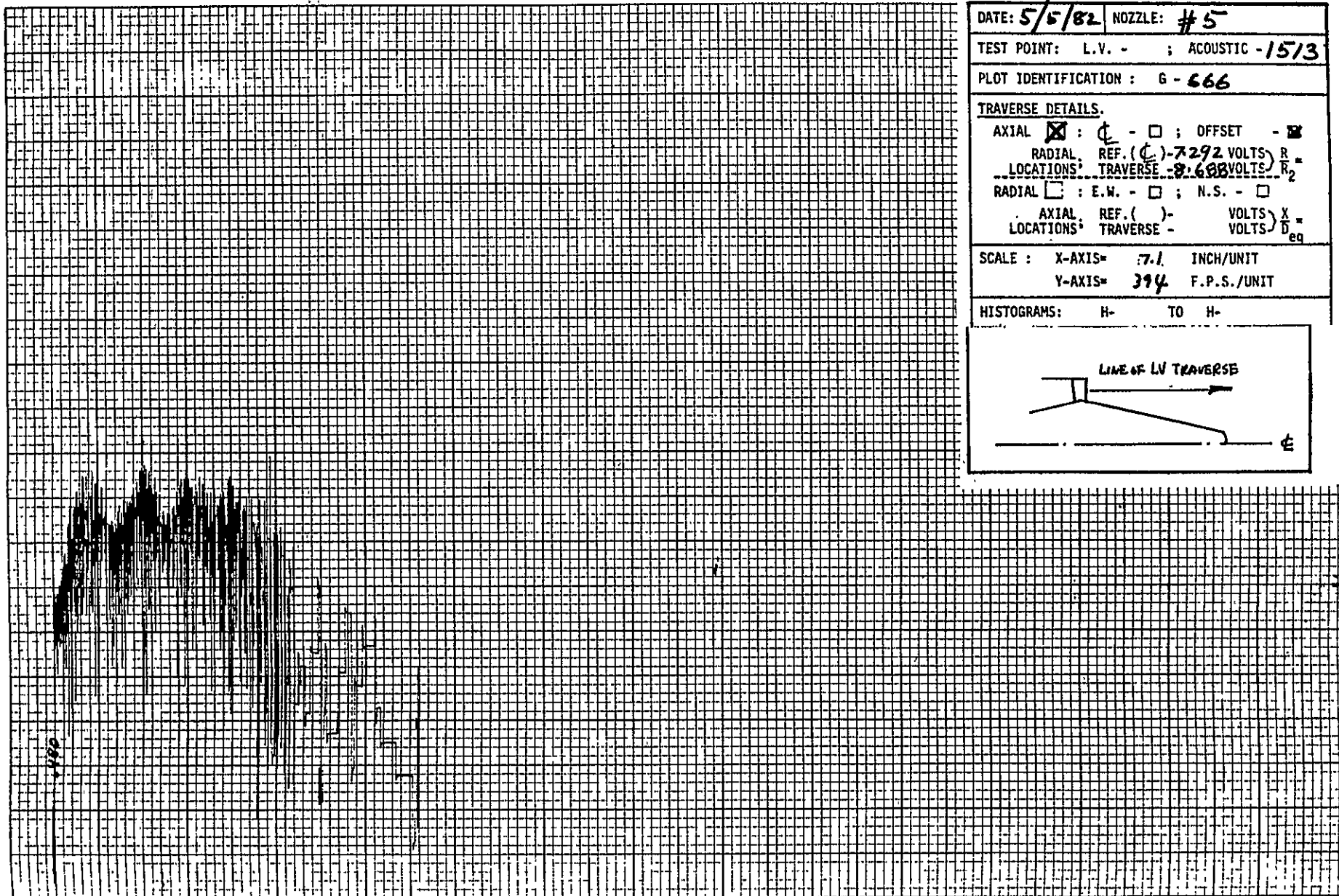
1149
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NAVY AIRCRAFT ENGINEERING
BUREAU
WASHINGTON, D.C. 20340



DATE: 5/4/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1513
PLOT IDENTIFICATION: G-665	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

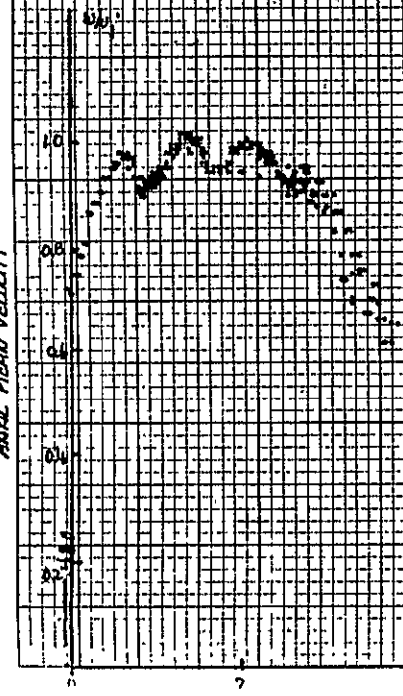
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150



1151

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$$P_r = \underline{3.029}, \quad V_{a/c} = \underline{0} \text{ f/s}$$

$$T_T = \underline{850} \text{ } ^\circ\text{R}, \quad D_{eq} = \underline{5.03} \text{ in.}$$

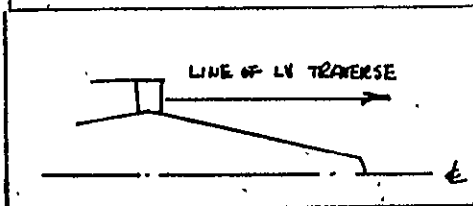
$$V_j = \underline{1701} \text{ f/s}, \quad h = \underline{1.19} \text{ in.}$$

DATE: 5/5/82 NOZZLE: # 5TEST POINT: L.V. - ; ACOUSTIC - 1513PLOT IDENTIFICATION : G-667

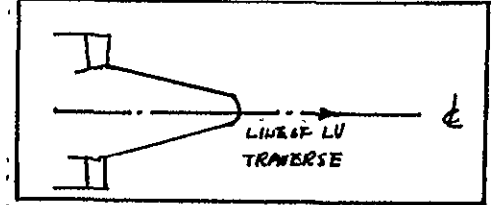
TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☒RADIAL REF. (ϕ) - 7.292 VOLTS R_1
LOCATIONS* TRAVERSE - 8.688 VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS* TRAVERSE - VOLTS D_{eq} SCALE : X-AXIS= 7.1 INCH/UNITY-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

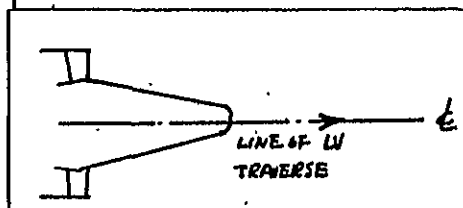


DATE: 5/5/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G - 668	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - 7.228 VOLTS	$R_2 = 0$
LOCATIONS: TRAVERSE - 7.228 VOLTS	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS	X_{eq}
LOCATIONS: TRAVERSE - VOLTS	D_{eq}
SCALE: X-AXIS= 7.1 INCH/UNIT	
Y-AXIS= 314 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



6000

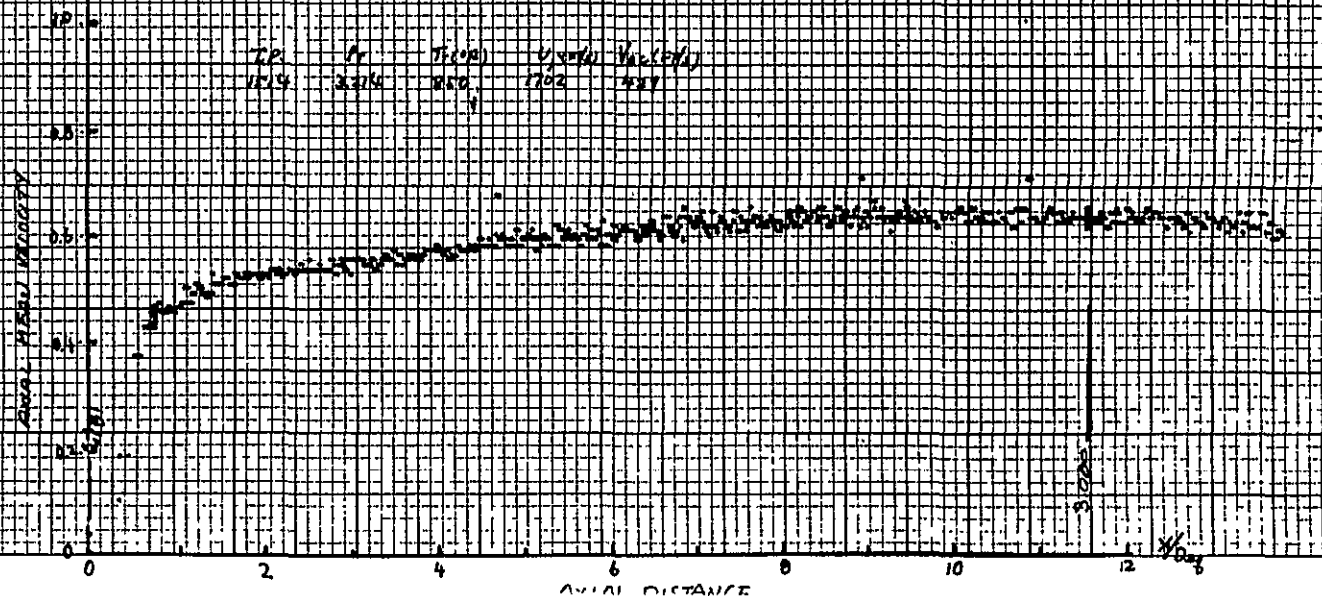
DATE: 5/5/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC -1514
PLOT IDENTIFICATION: G-669	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - 7228 VOLTS	$R_2 = 0$
LOCATIONS* TRAVERSE - 7228 VOLTS	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{x}{D_{eq}}$
LOCATIONS* TRAVERSE -	VOLTS $\frac{D_{eq}}$
SCALE : X-AXIS= 7.1 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



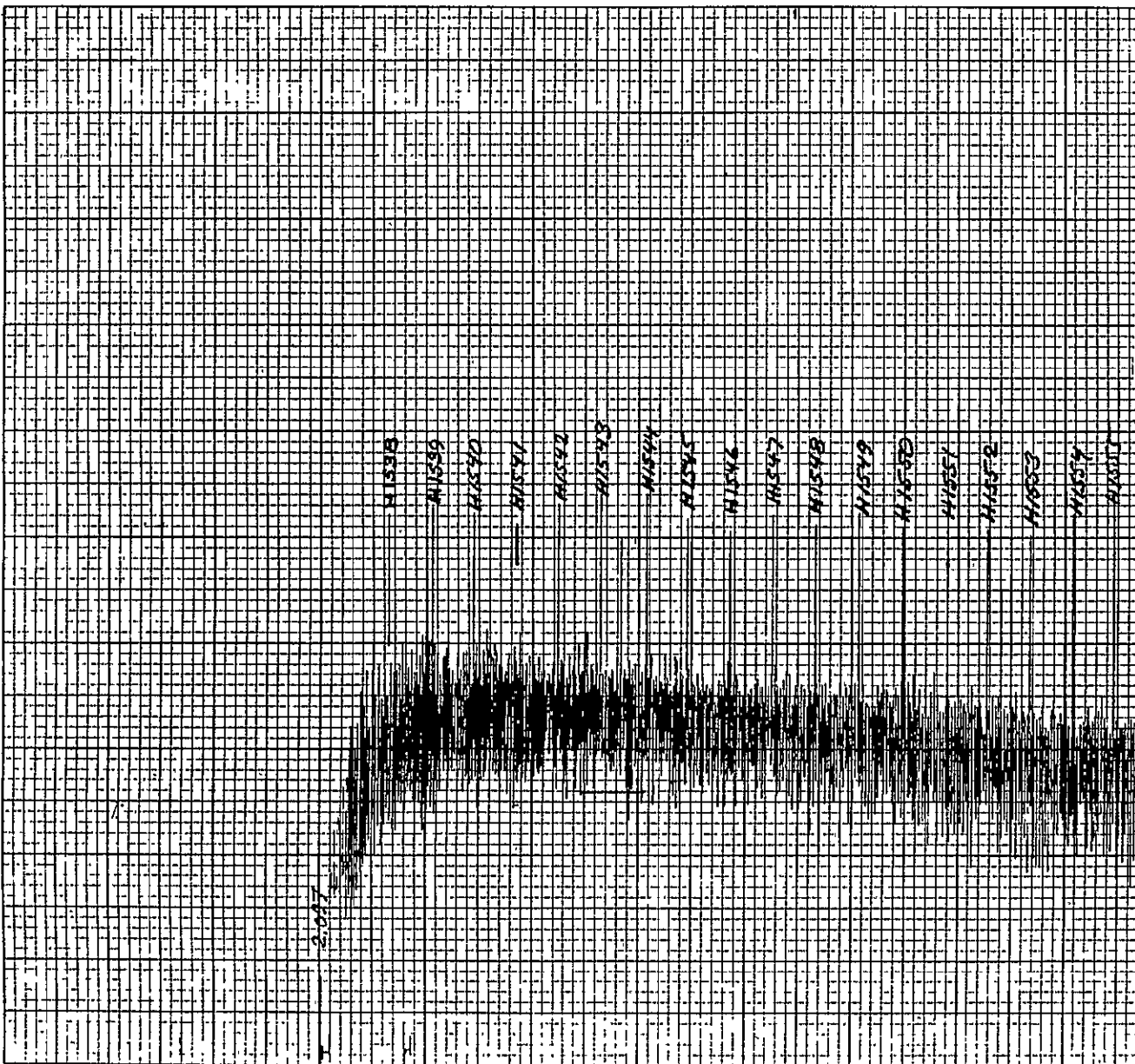
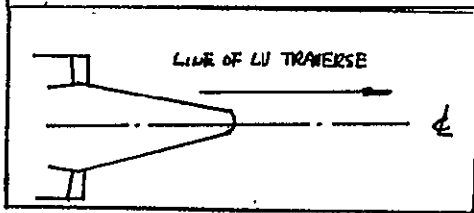
$$P_r = 3.128, V_{a/c} = 400 \text{ F/s}$$

$$T_T = 1722^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

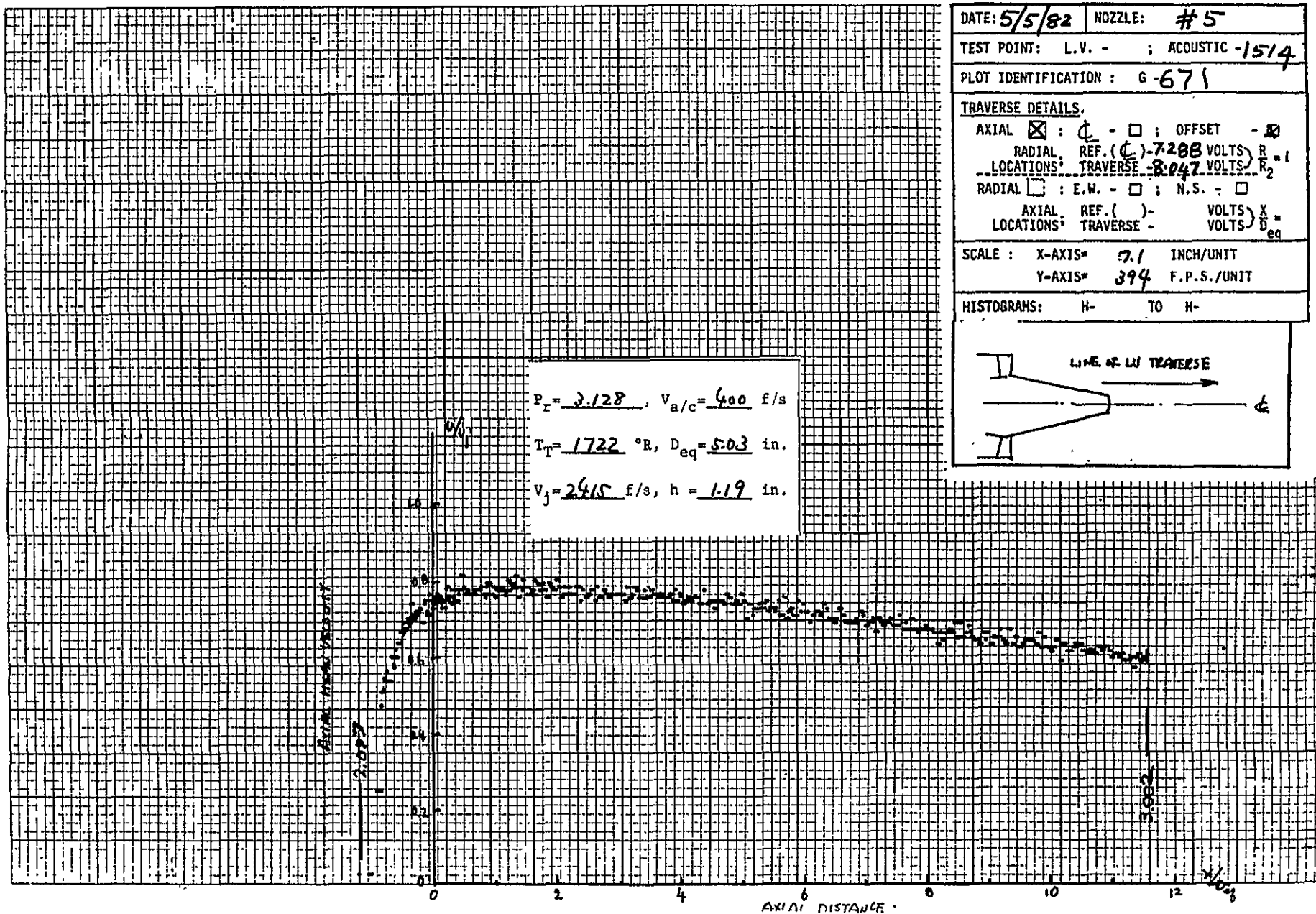
$$V_j = 2415 \text{ F/s}, h = 1.19 \text{ in.}$$



DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1574	
PLOT IDENTIFICATION: G-670	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> : OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 1$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> : N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X_{D_{eq}} =$
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 7.1 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1538 TO H-1555	



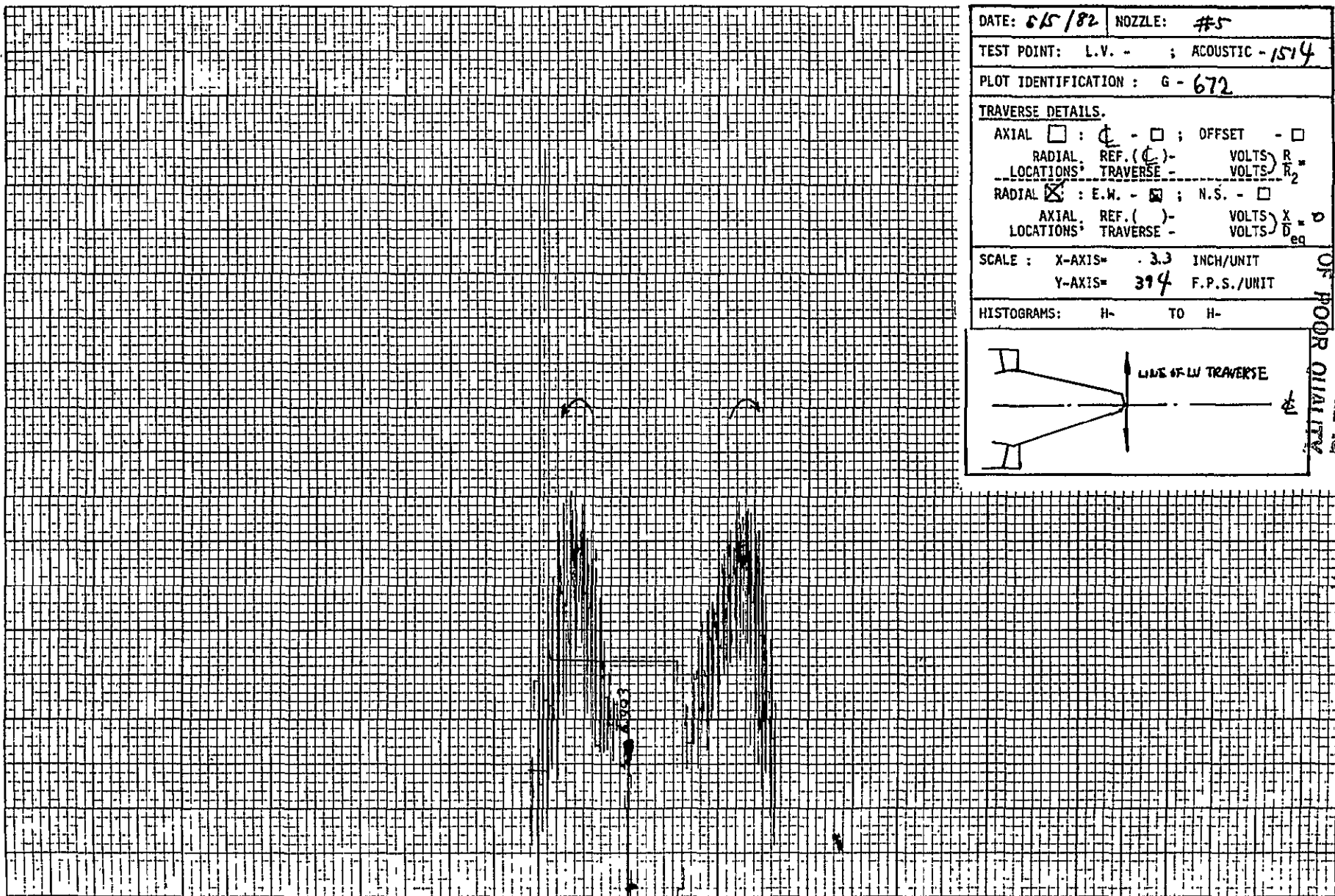
1156



NO. XY 101X

1157

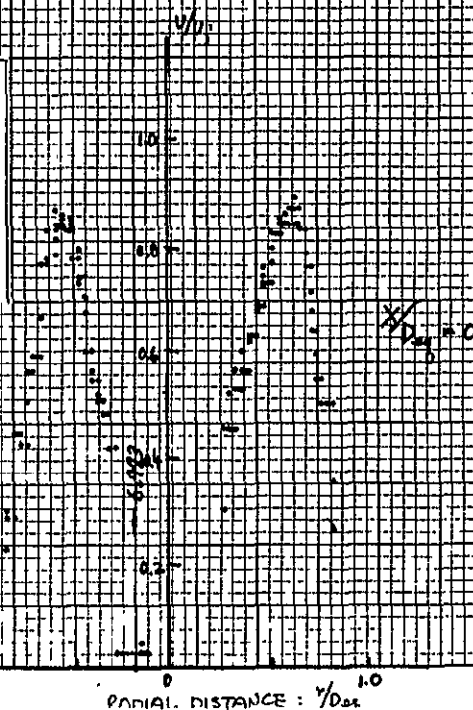
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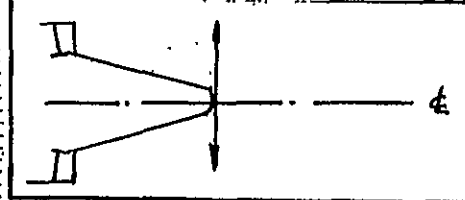
DATE: 6/5/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION : G - 672	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= .33 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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$P_r = 3.128$, $v_{a/c} = 400$ f/s
 $T_r = 1722$ °R, $D_{eq} = 5.03$ in.
 $V_1 = 2445$ f/s, $h = 1.19$ in.



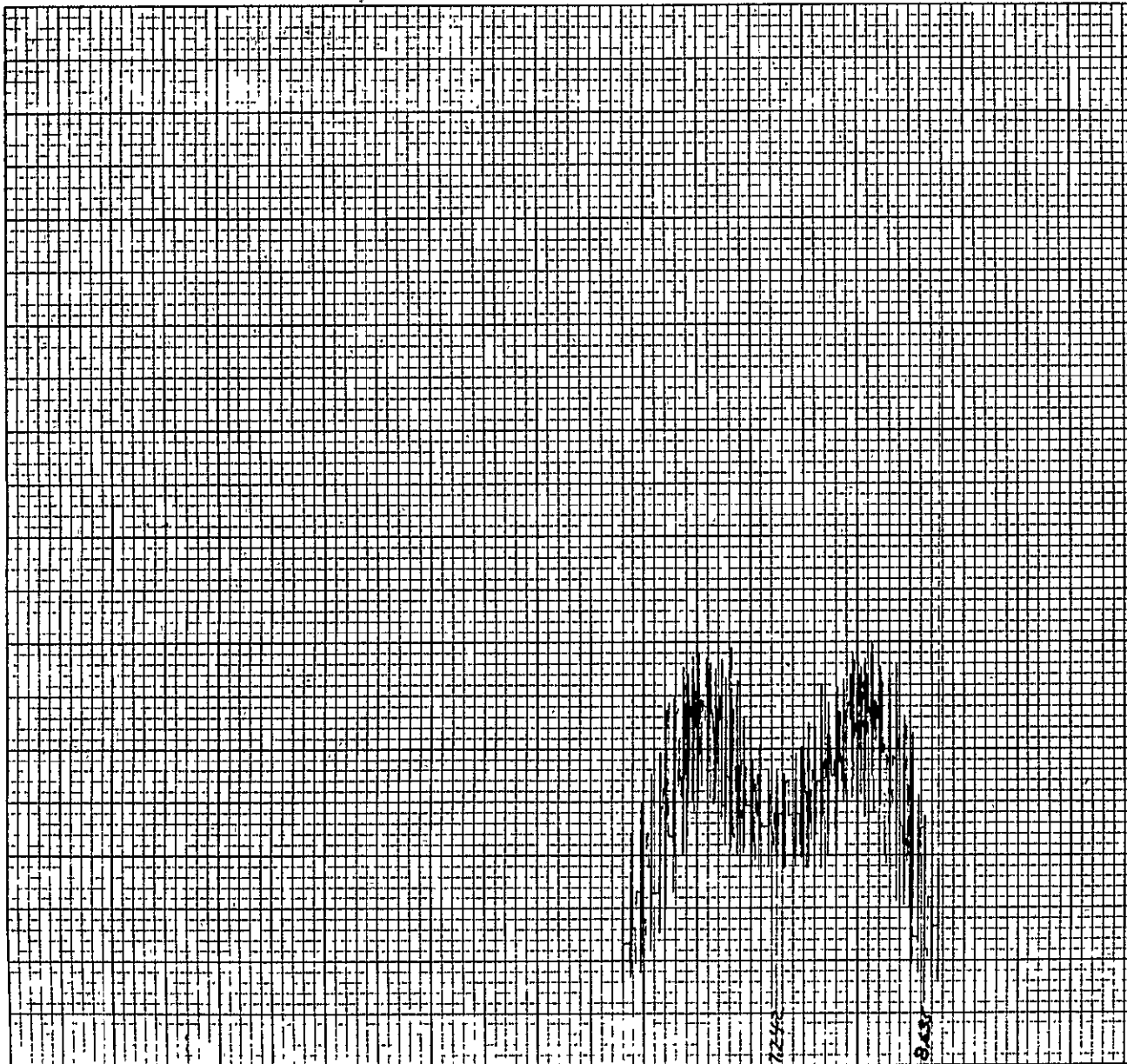
DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION: G-673	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) - 7.288 VOLTS) R_1 =	
LOCATIONS, TRAVERSE - VOLTS) R_2 =	
RADIAL <input checked="" type="checkbox"/> : E.W. - ϕ ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () - VOLTS) X = 0	
LOCATIONS, TRAVERSE - VOLTS) D_{eq} =	
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



1011 XY

1159

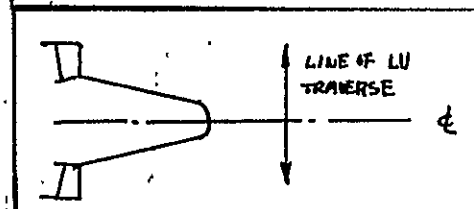
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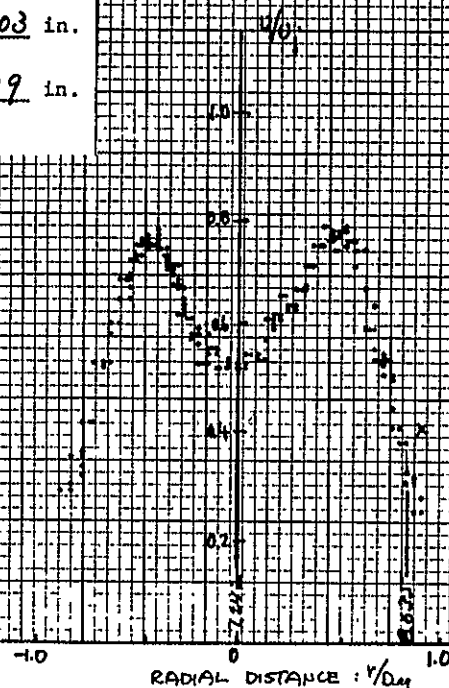
DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION : G-674	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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OF FOUR QUALITY

DATE: 5/5/72	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G-675	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS* TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS* TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.3	INCH/UNIT
Y-AXIS= 394	F.P.S./UNIT
HISTOGRAMS: H-	TO H-



$P_z = 2.128$, $V_{a/c} = 400$ F/S
 $T_T = 1722$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2415$ F/S, $h = 1.19$ in.



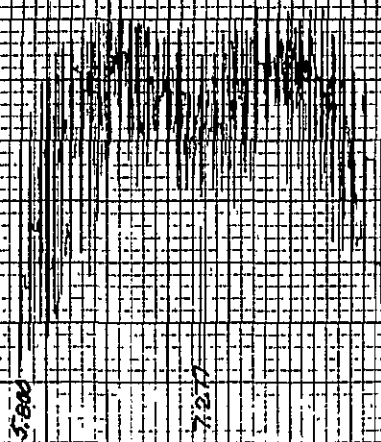
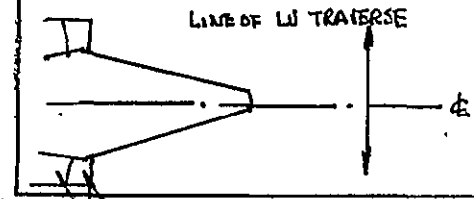
1011 AX 00

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DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G - 676	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS U_{eq} = 6
SCALE: X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



$$P_r = 3.128, \quad v_{a/c} = 400 \text{ f/s}$$

$$T_r = 1722^\circ \text{R}, \quad D_{eq} = 5.03 \text{ in.}$$

$$v_j = 2415 \text{ f/s}, \quad h = 1.19 \text{ in.}$$

 -10 0 10
 RADIAL DISTANCE - $\frac{1}{16}$

DATE: 5/5/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION: G-677

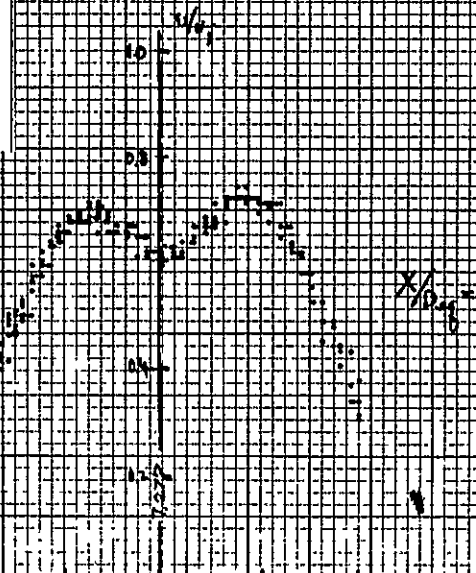
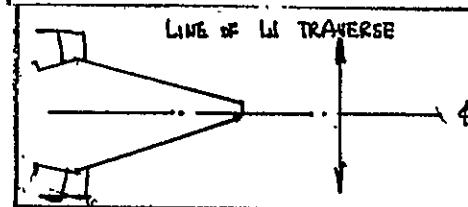
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL, REF. (ϕ) - VOLTS $\frac{R}{R_2}$ LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL, REF. () - VOLTS $\frac{X}{D_{eq}}$ LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$

SCALE: X-AXIS = 3.3 INCH/UNIT

Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 5/5/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION: G-67B

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

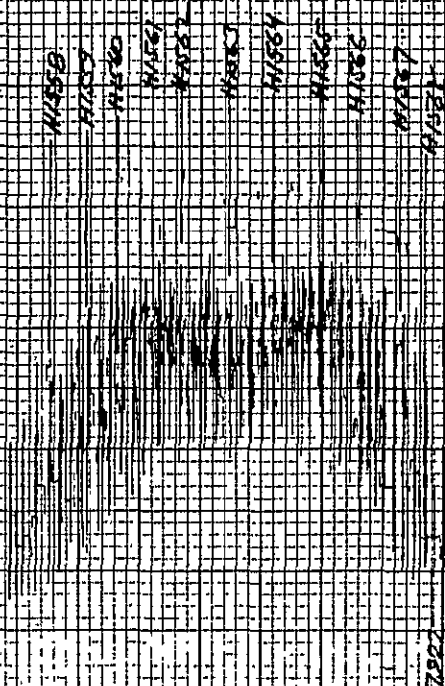
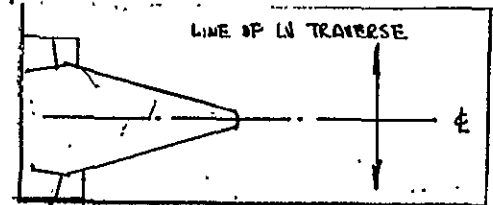
AXIAL REF. () - VOLTS X

LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 3.3 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

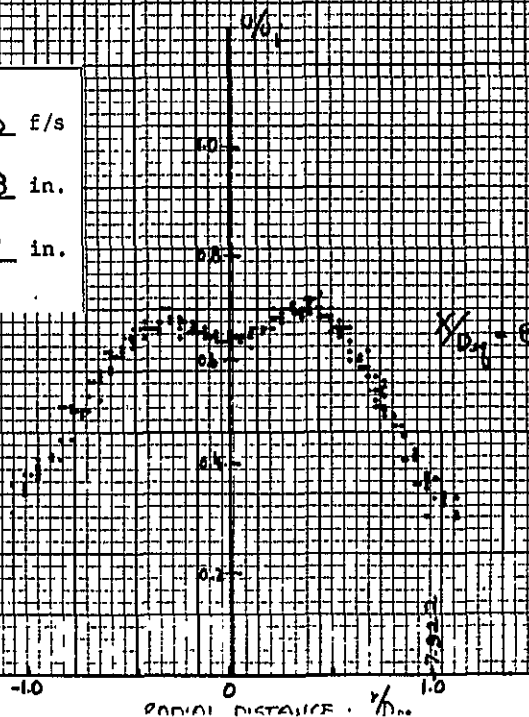
HISTOGRAMS: H-1558 TO H-1568



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$T_T = 1722$ °R, $D_{eq} = 5.03$ in.

$V_j = 2415$ f/s, $h = 1.19$ in.



DATE: 5/5/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION: 6 - 679

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

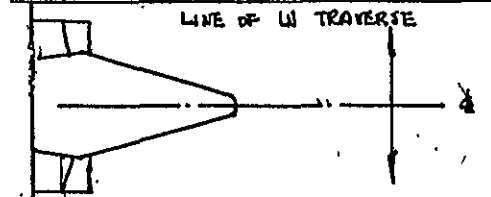
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 3.3 INCH/UNIT

Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



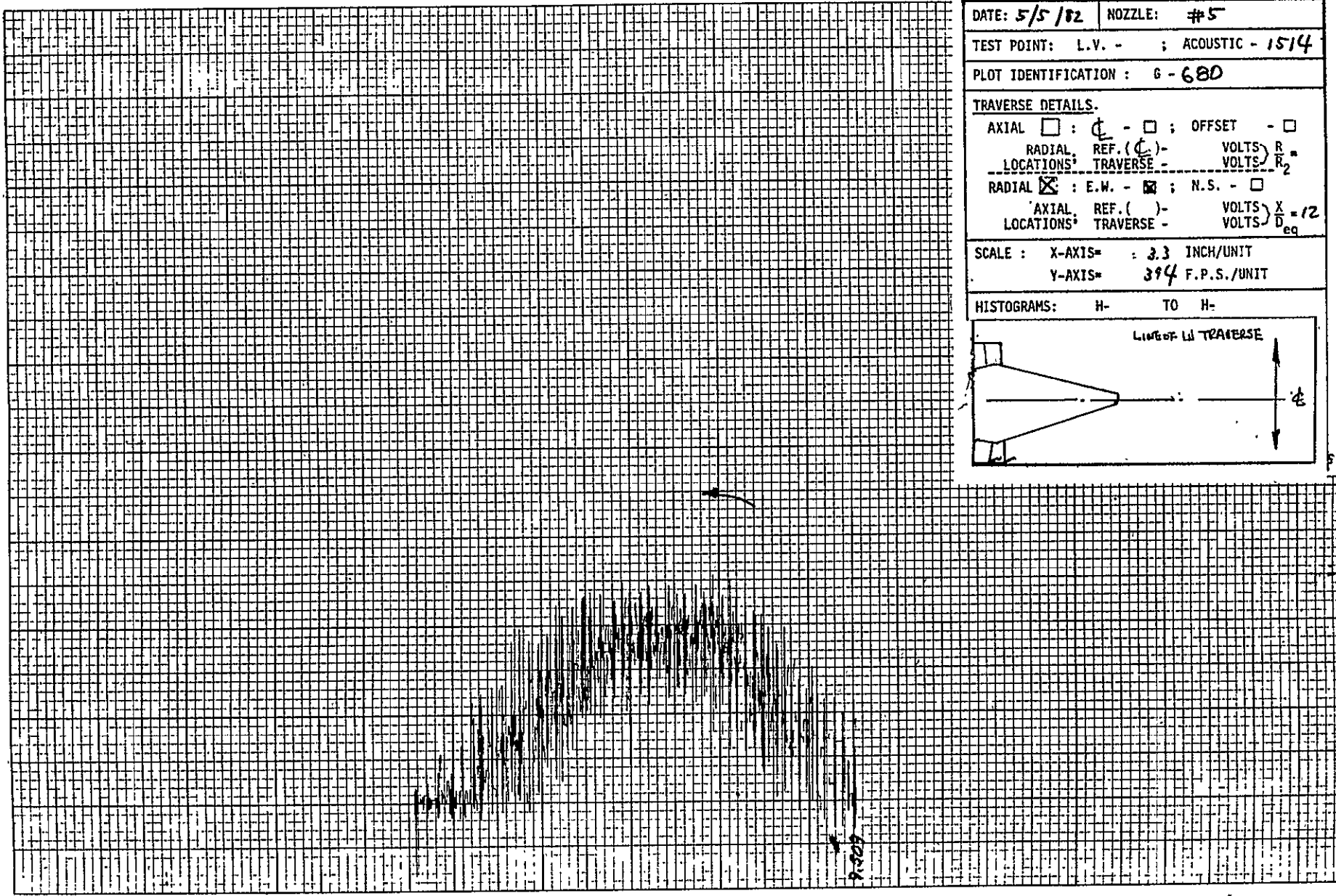
1011 AX CM

1165

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DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION : 8-680	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL LOCATIONS: REF. (C) -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL LOCATIONS: REF. () -	VOLTS $\frac{X}{D_{eq}} = 12$
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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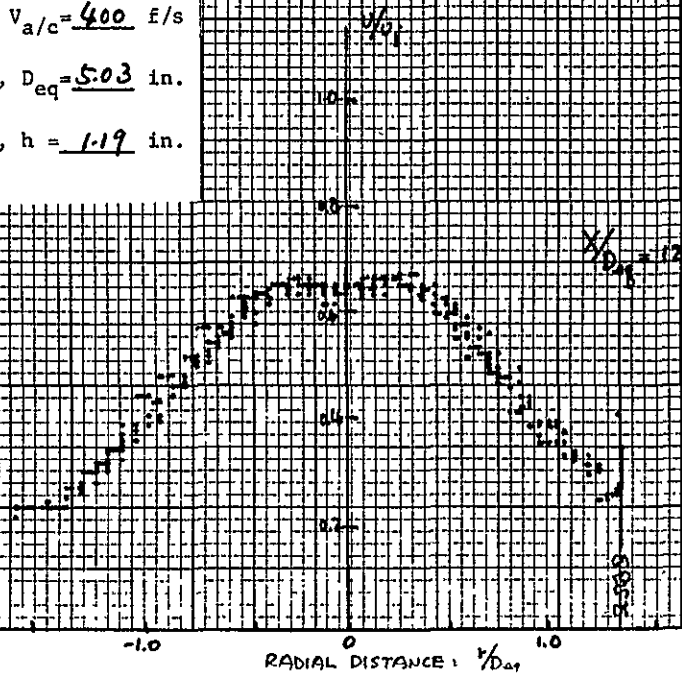
NO. 1011 AX

1166

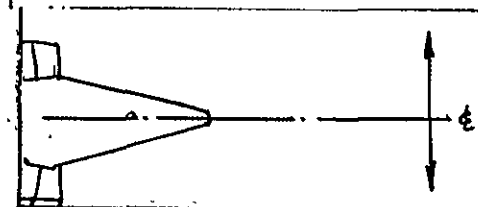
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$P_r = 3.128$; $V_{a/c} = 400$ f/s
 $T_T = 1722$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2415$ f/s, $h = 1.19$ in.



DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION: G - 681	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

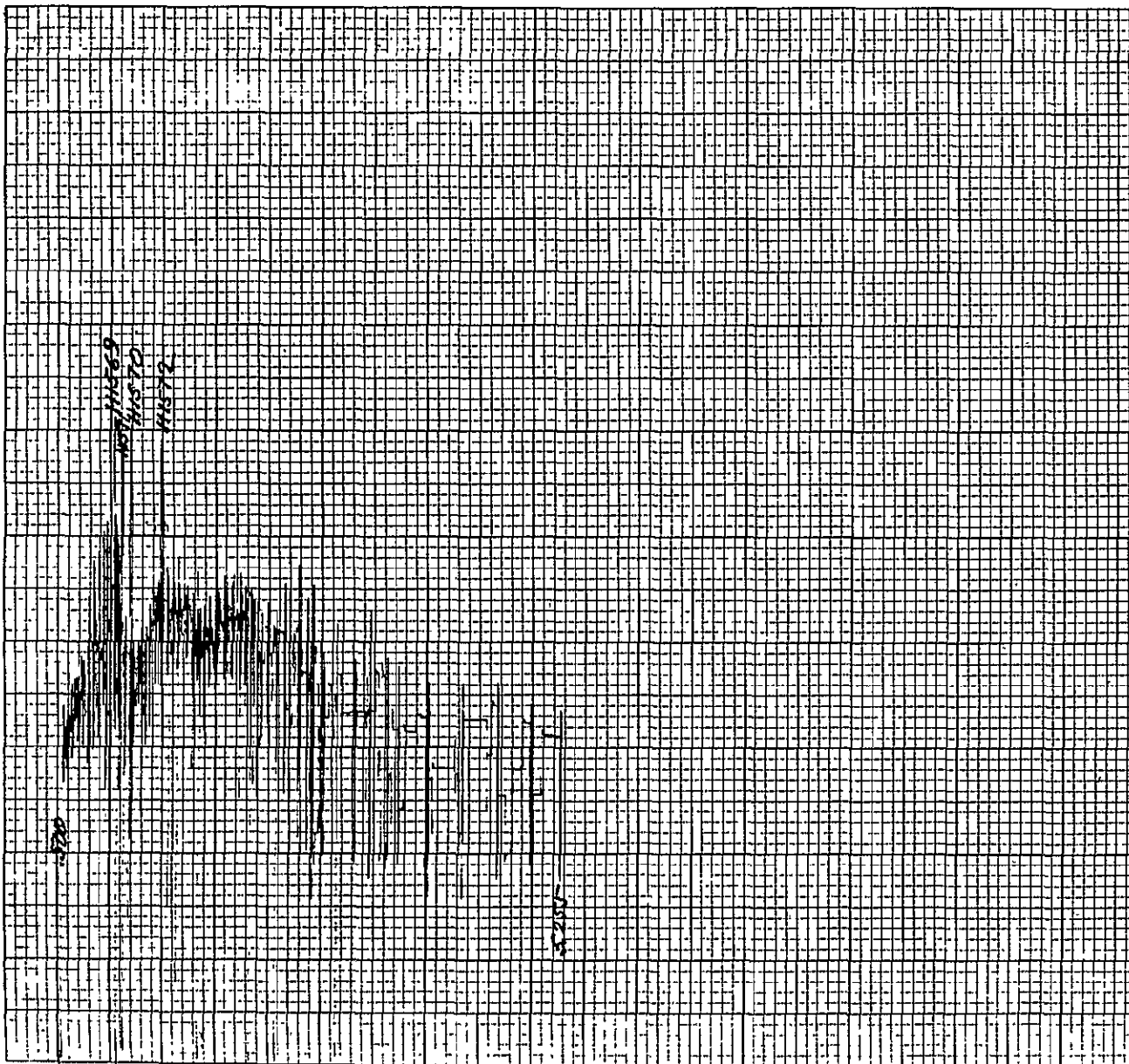


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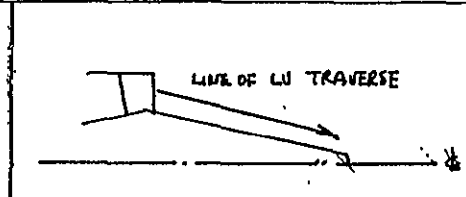
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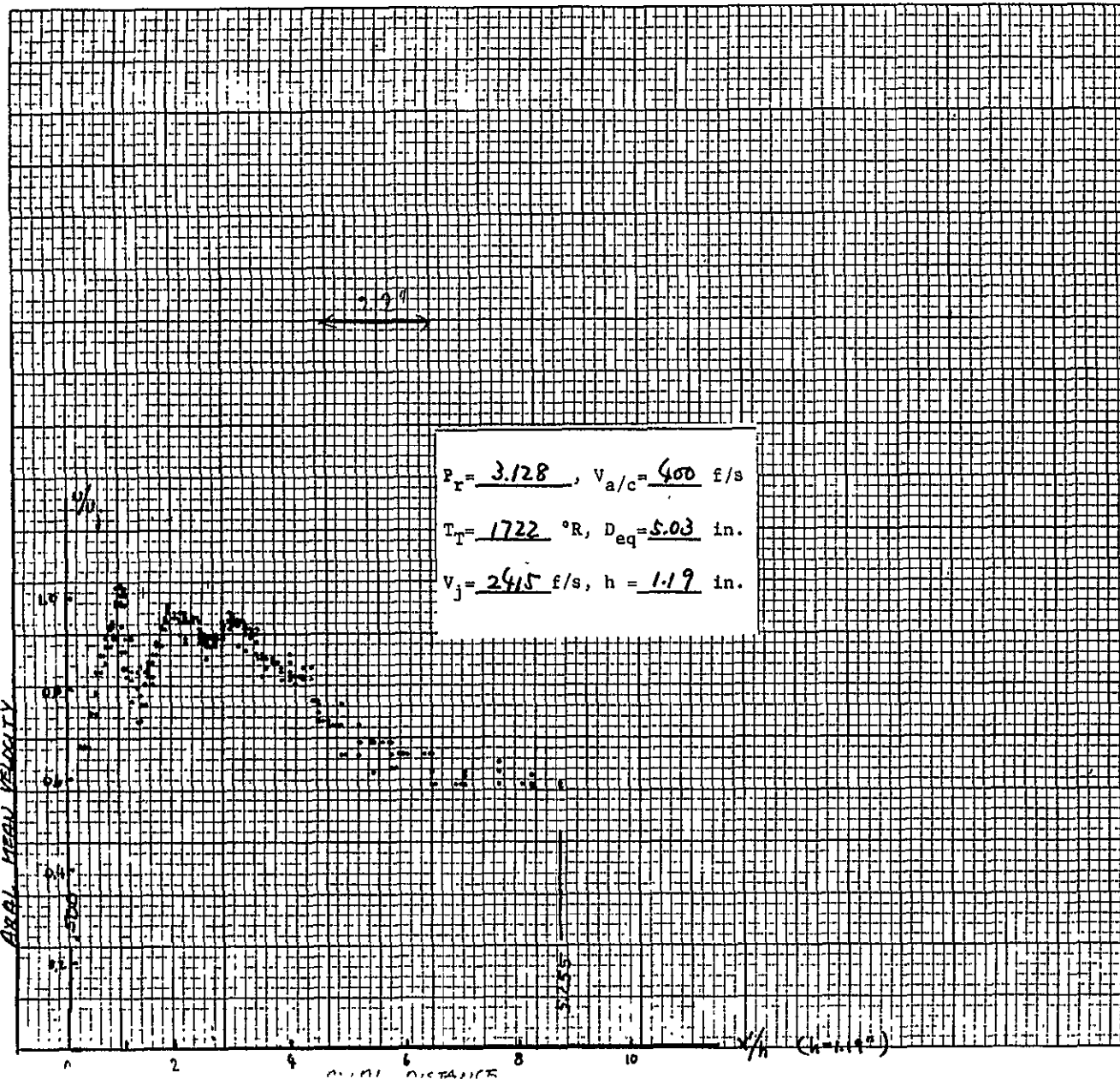
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DATE: 5/5/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G - 682	
TRAVERSE DETAILS.	
AXIAL [S] : ϕ - \square ;	OFFSET - \square
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL [] : E.W. - \square ;	N.S. - \square
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS U_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 374 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	





DATE: 5/5/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 1574

PLOT IDENTIFICATION: G-683

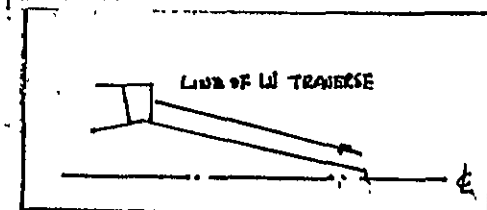
TRAVERSE DETAILS.

AXIAL ☒ : ☐ - ☐ ; OFFSET - ☐RADIAL REF. () - VOLTS R_1 LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS X LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 374 F.P.S./UNIT

HISTOGRAMS: H- TO H-



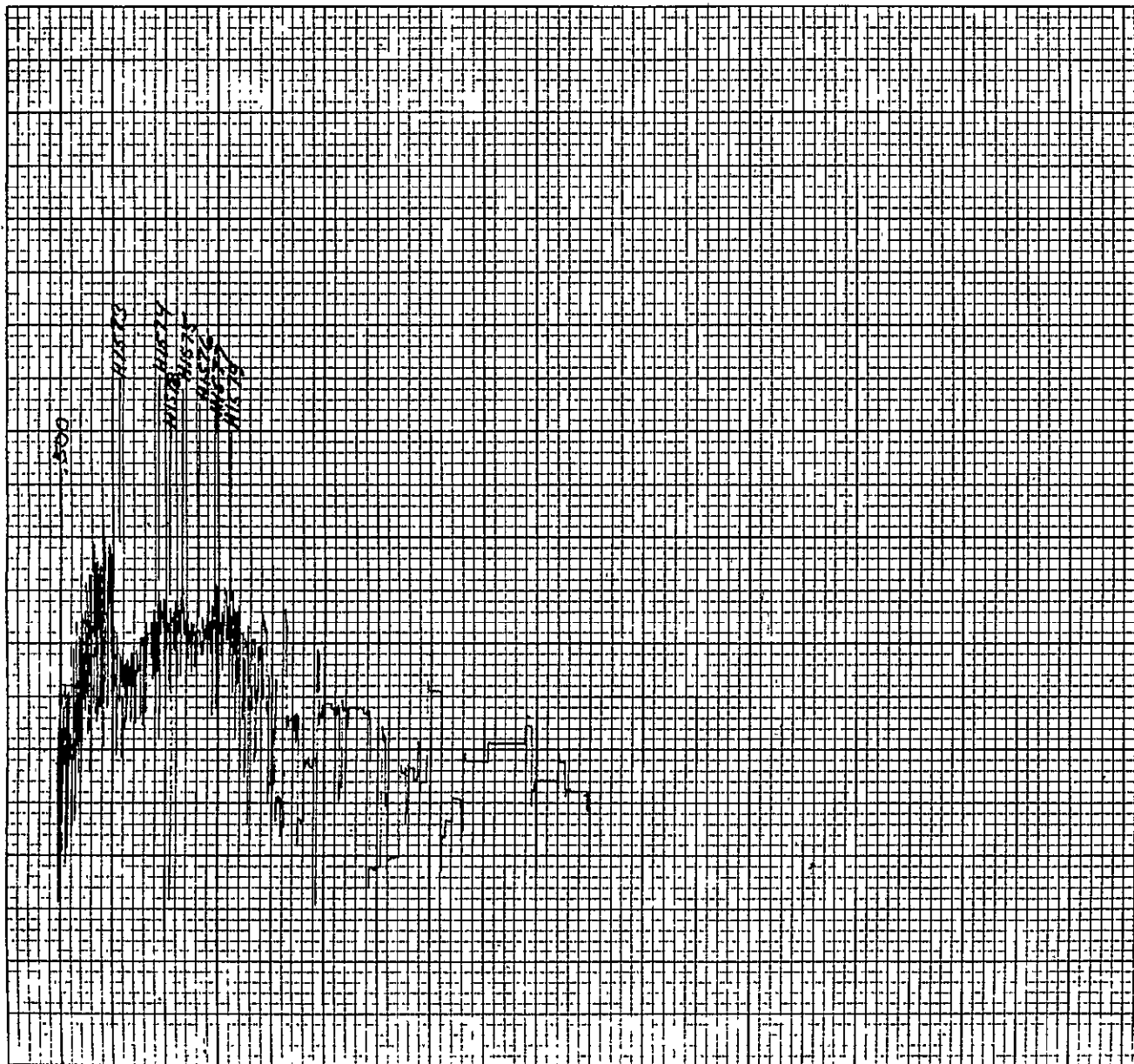
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1011 AX 700

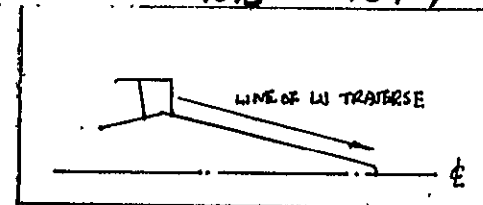
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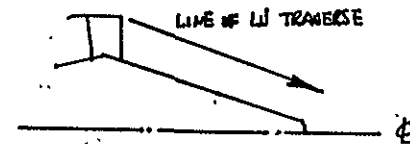


DATE: 5/6/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION: G-684	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS* TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS* TRAVERSE -	VOLTS X_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 334 F.P.S./UNIT	
HISTOGRAMS: H-1573 TO H-1579	

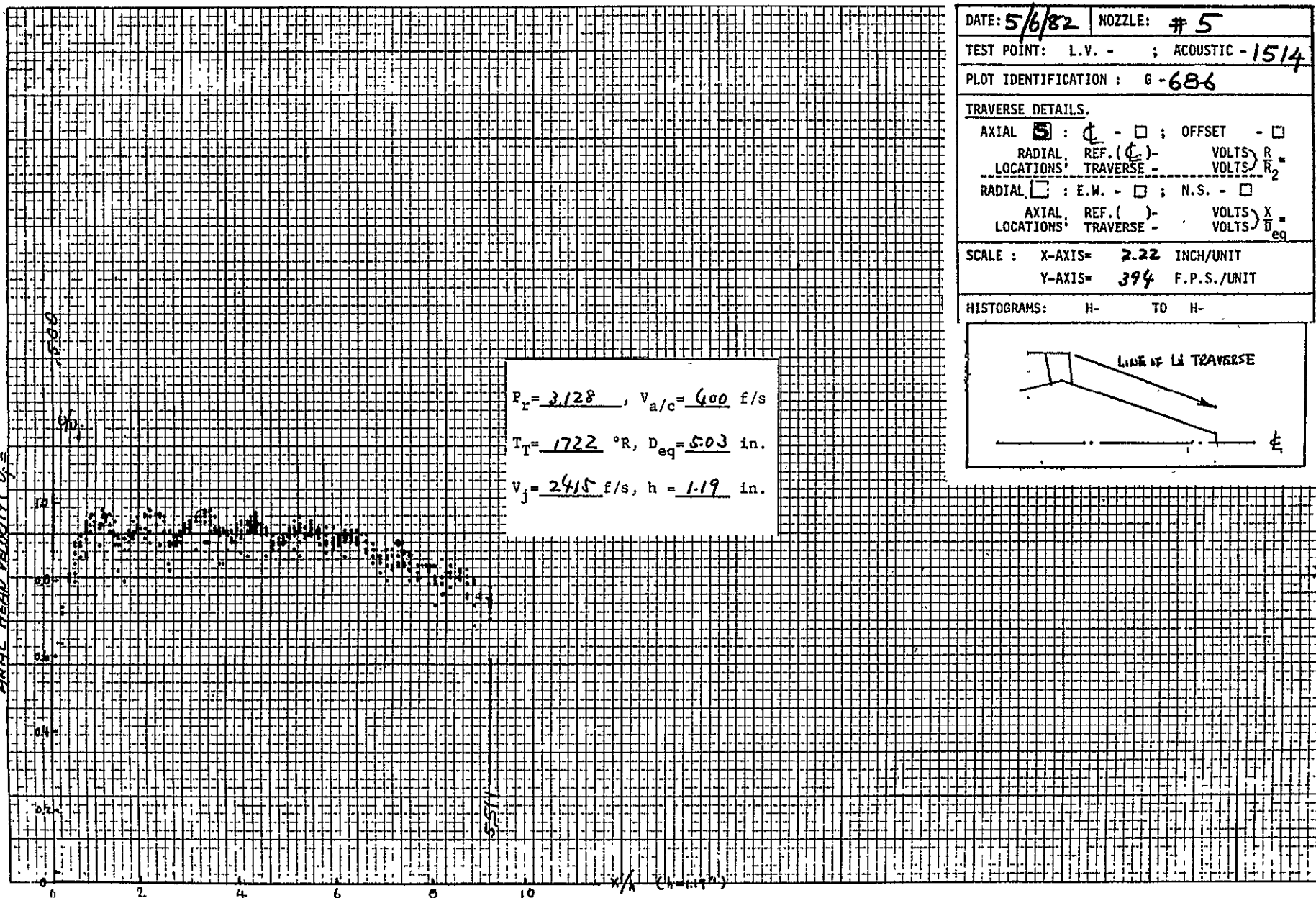


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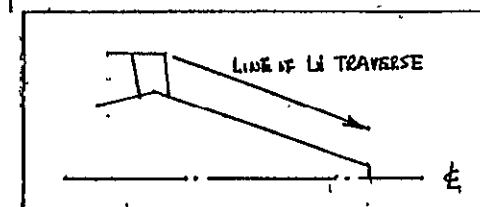
DATE: 5/6/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G-685	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS=	2.22 INCH/UNIT
Y-AXIS=	394 F.P.S./UNIT
HISTOGRAMS:	H-1580 TO H-1593



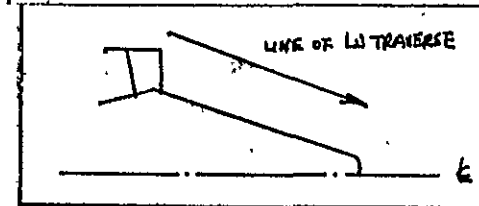
1171

AXIAL MEAN VELOCITY (V_a)

DATE: 5/6/82	NOZZLE: # 5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION: G-686	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (<input checked="" type="checkbox"/>) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



DATE: 5/6/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION: G-687	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

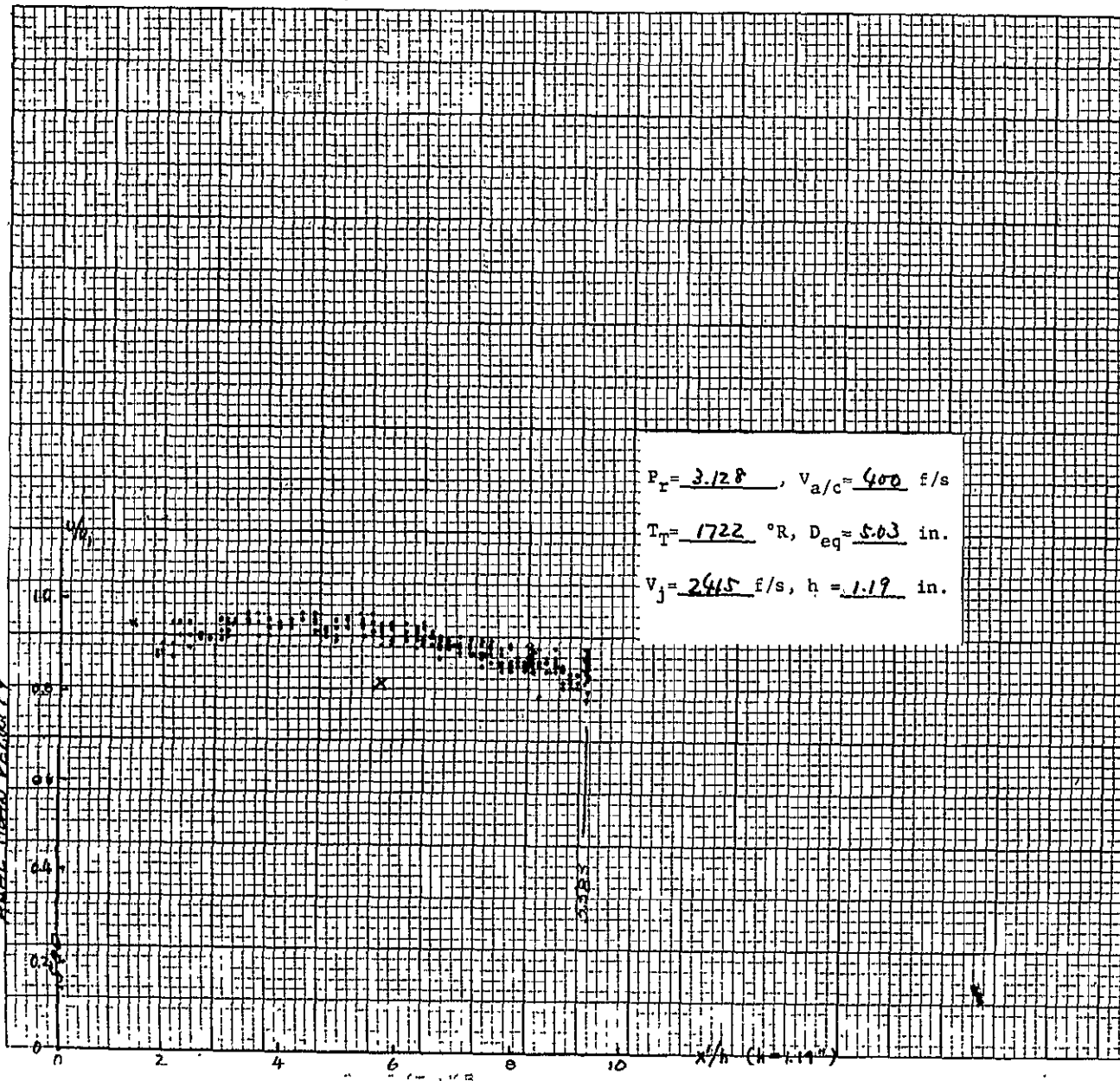


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1173

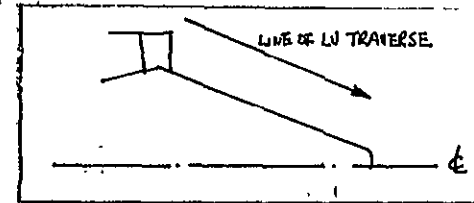
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AXIAL AVERAGE VELOCITY



$P_r = 3.128$, $V_{a/c} = 400$ f/s
 $T_T = 1722$ °R, $D_{eq} = 5.63$ in.
 $V_j = 2445$ f/s, $h = 1.19$ in.

DATE: 5/6/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC -1514
PLOT IDENTIFICATION: G - 688	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



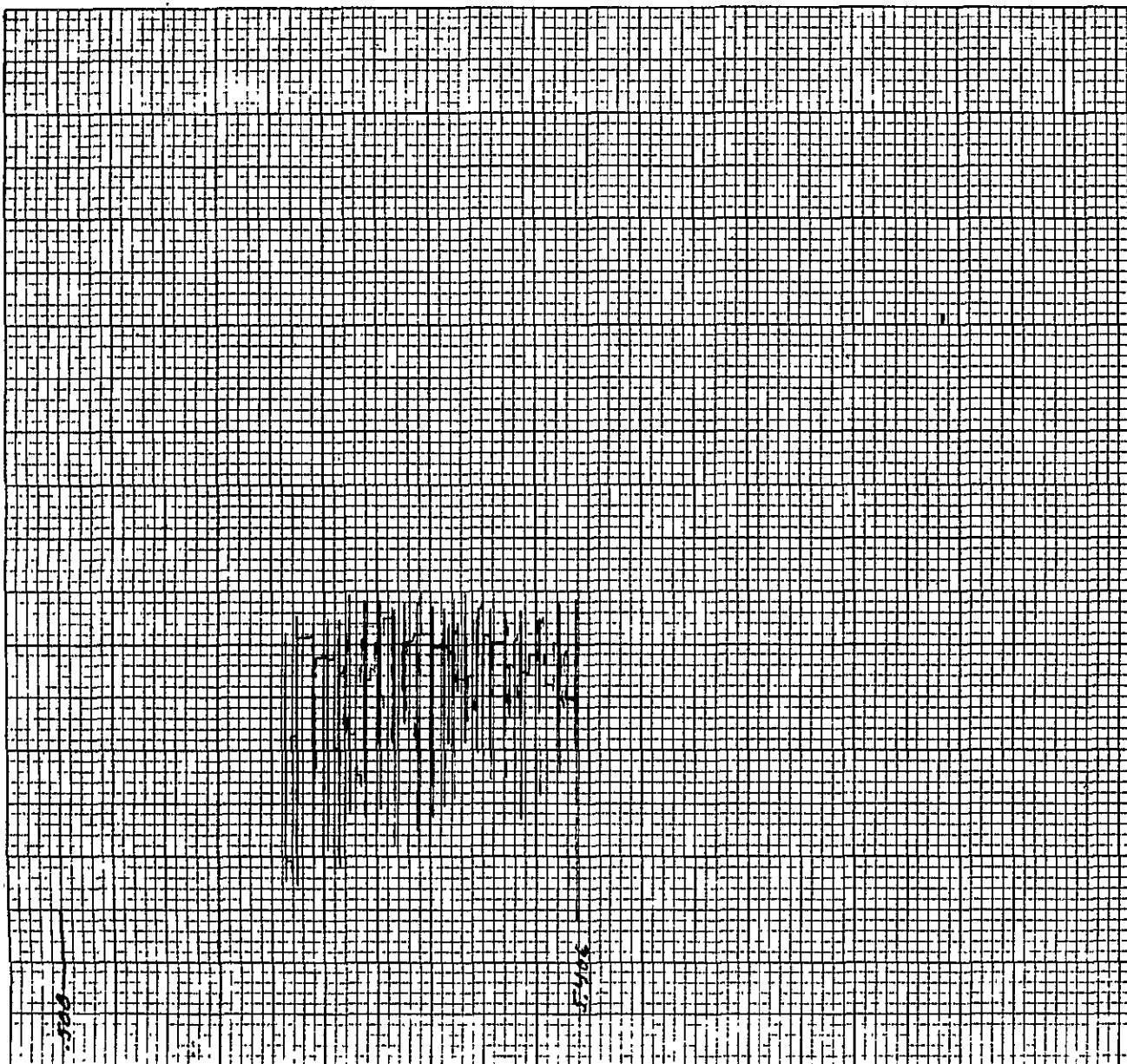
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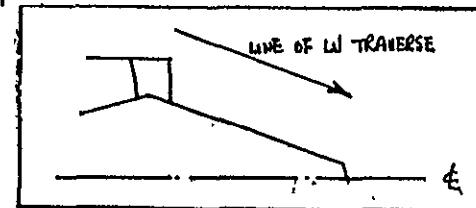
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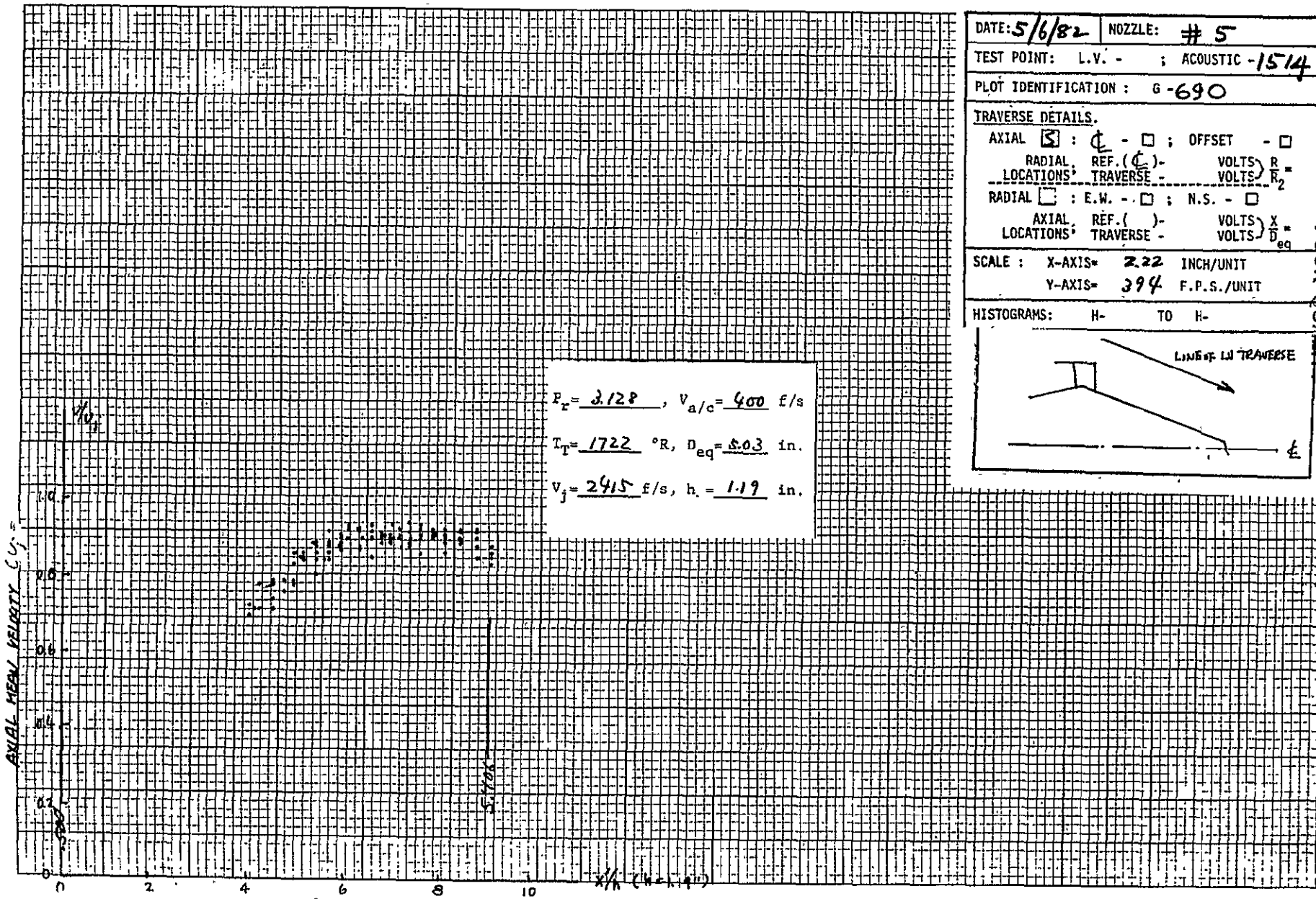
DATE: 5/6/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G-689	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 314 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



NO. 1011

1175

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DATE: 5/6/82 NOZZLE: # 5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION: G-690

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

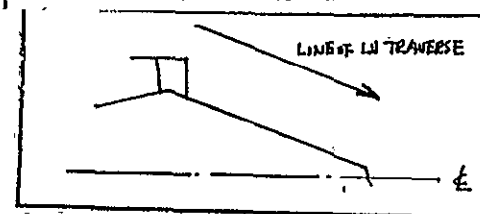
AXIAL REF. (ϕ) - VOLTS X

LOCATIONS TRAVERSE - VOLTS D_{eq}

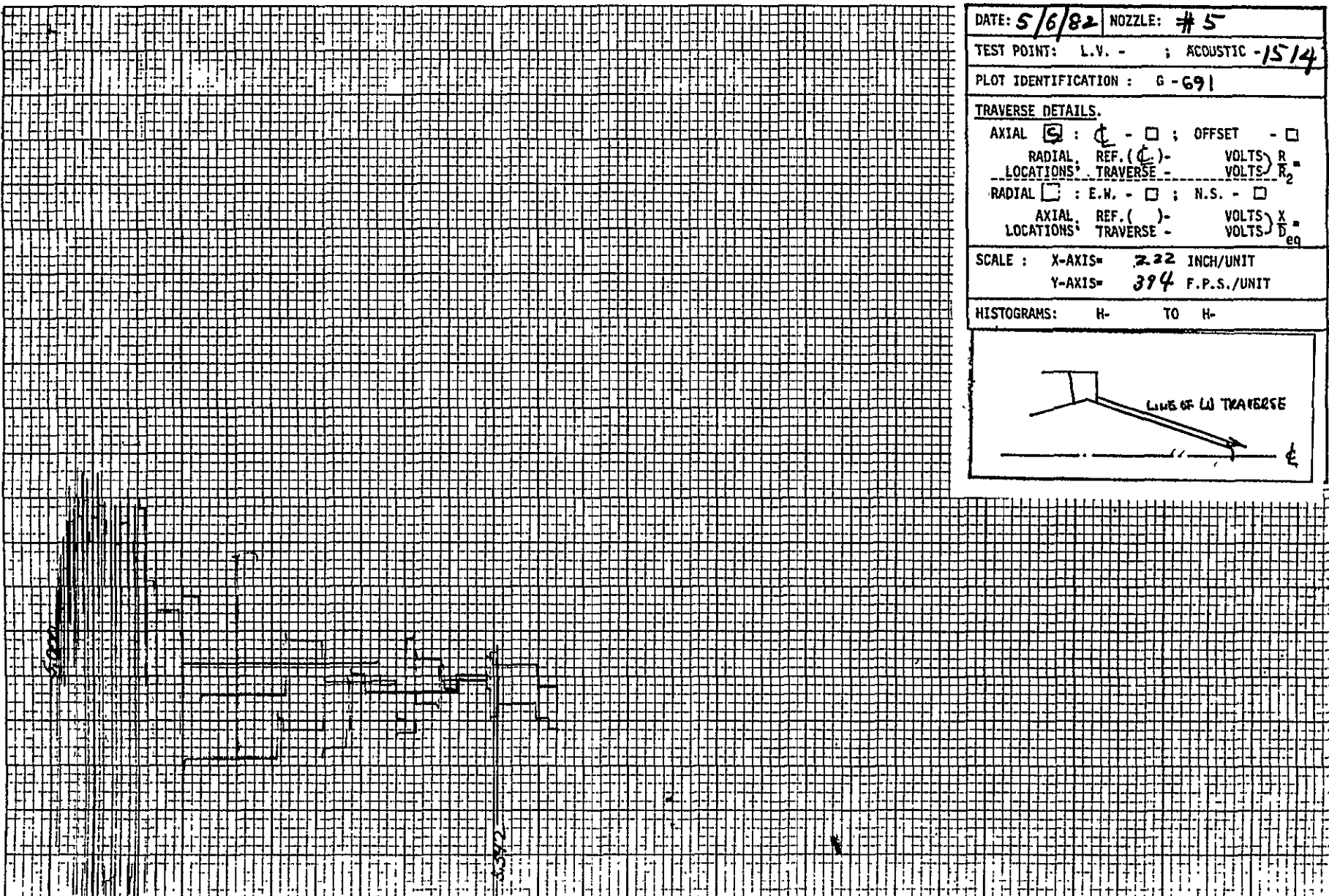
SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 5/6/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC -1514

PLOT IDENTIFICATION : G-691

TRAVERSE DETAILS.

AXIAL ϕ : ϕ - \square ; OFFSET - \square

RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

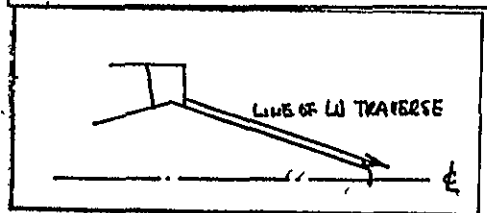
RADIAL \square : E.W. - \square ; N.S. - \square

AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

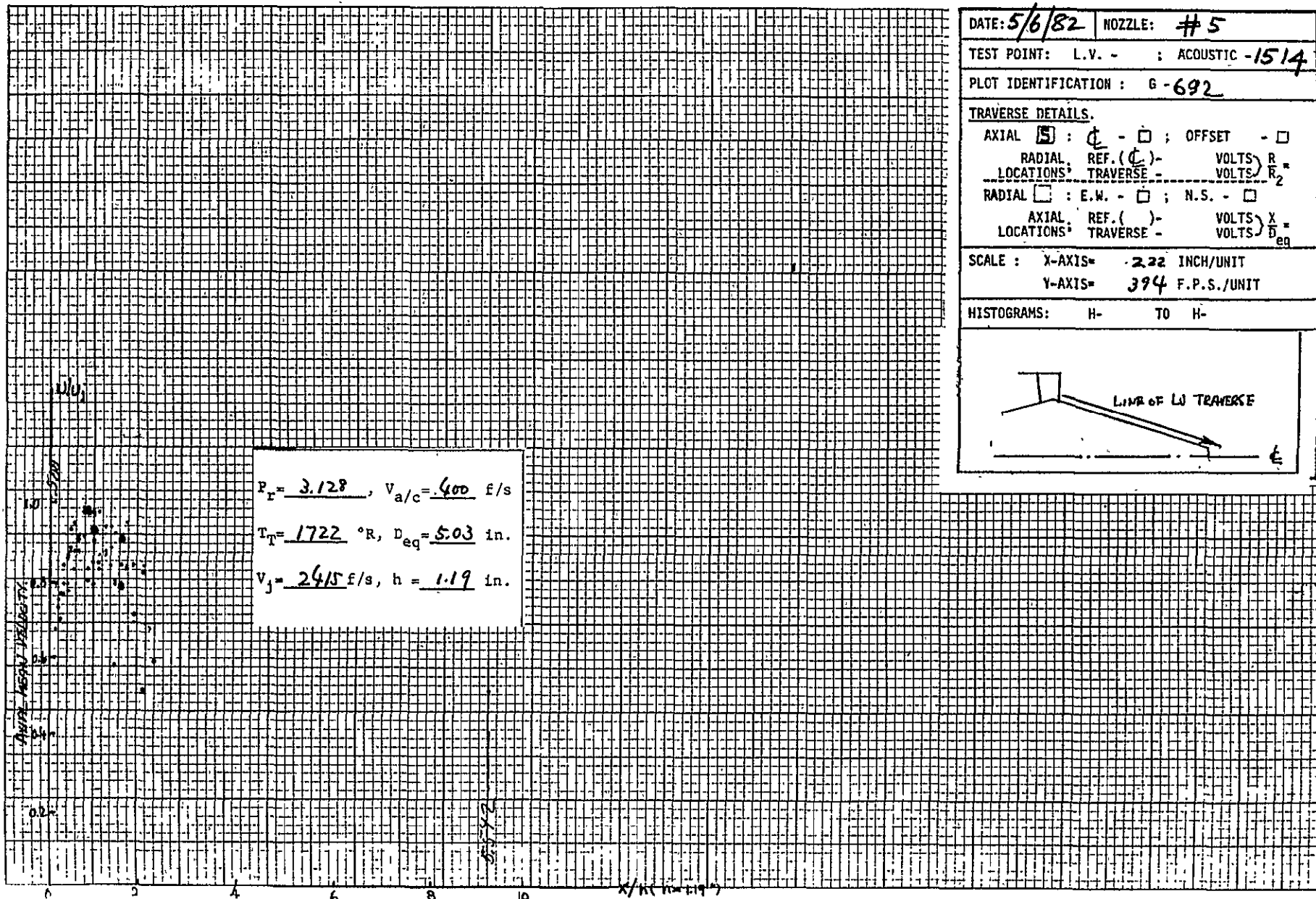
SCALE : X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



1177



DATE: 5/6/82 NOZZLE: #5

TEST POINT: L.V. - : ACOUSTIC - 1514

PLOT IDENTIFICATION: G-692

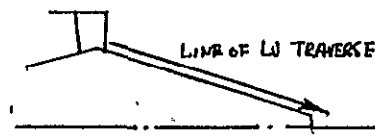
TRAVERSE DETAILS.

AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐RADIAL REF. (C) - VOLTS $\frac{R}{R_2}$ LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$ LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$

SCALE: X-AXIS = 2.22 INCH/UNIT

Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



DATE: 8/6/82 NOZZLE: # 5

TEST POINT: L.V. - ; ACOUSTIC - 1514

PLOT IDENTIFICATION: G-693

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ϕ ; N.S. - ☐

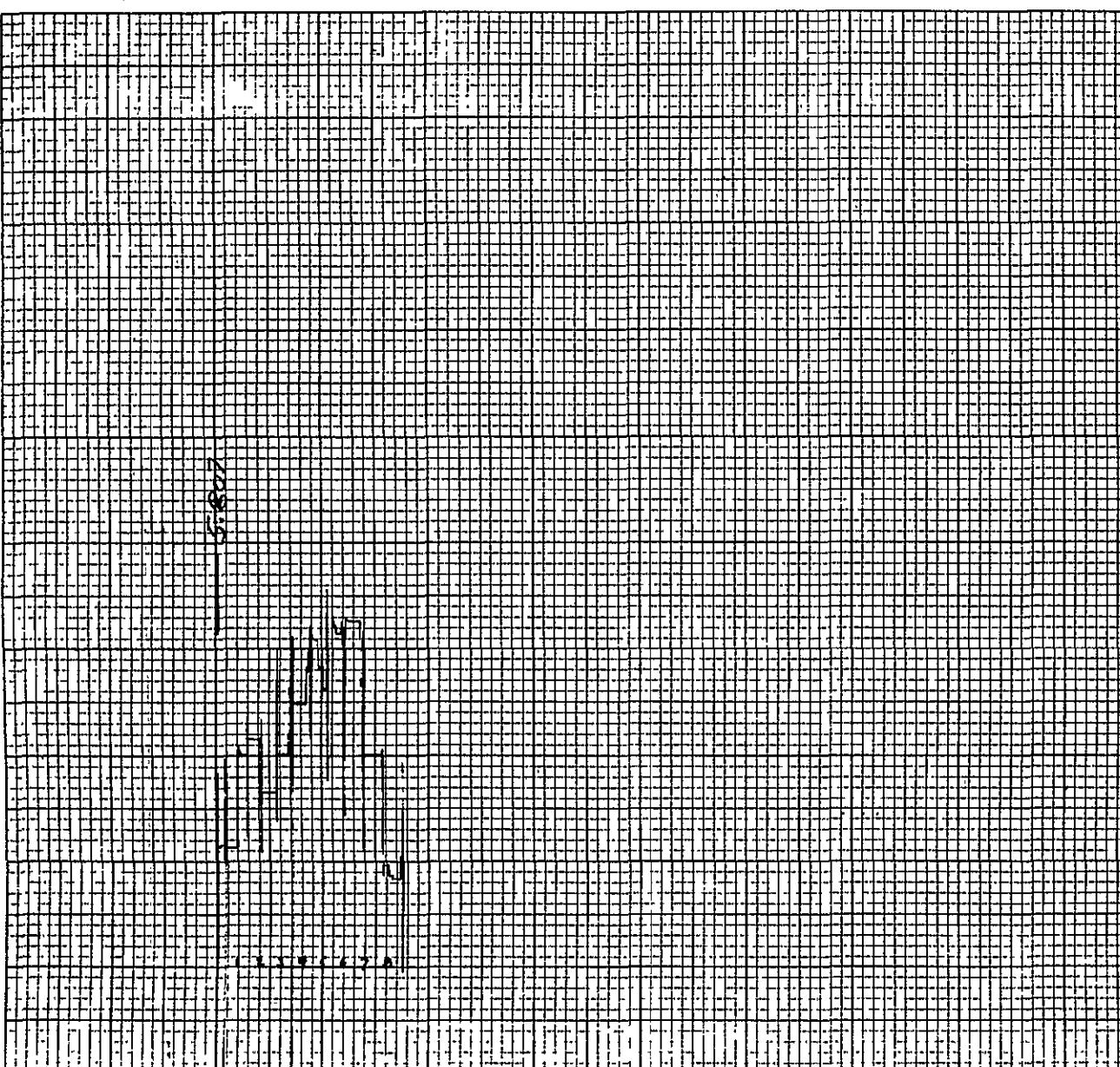
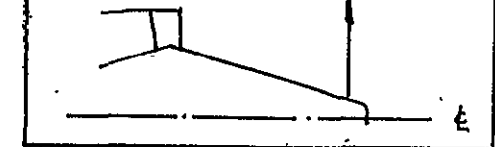
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= .33 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

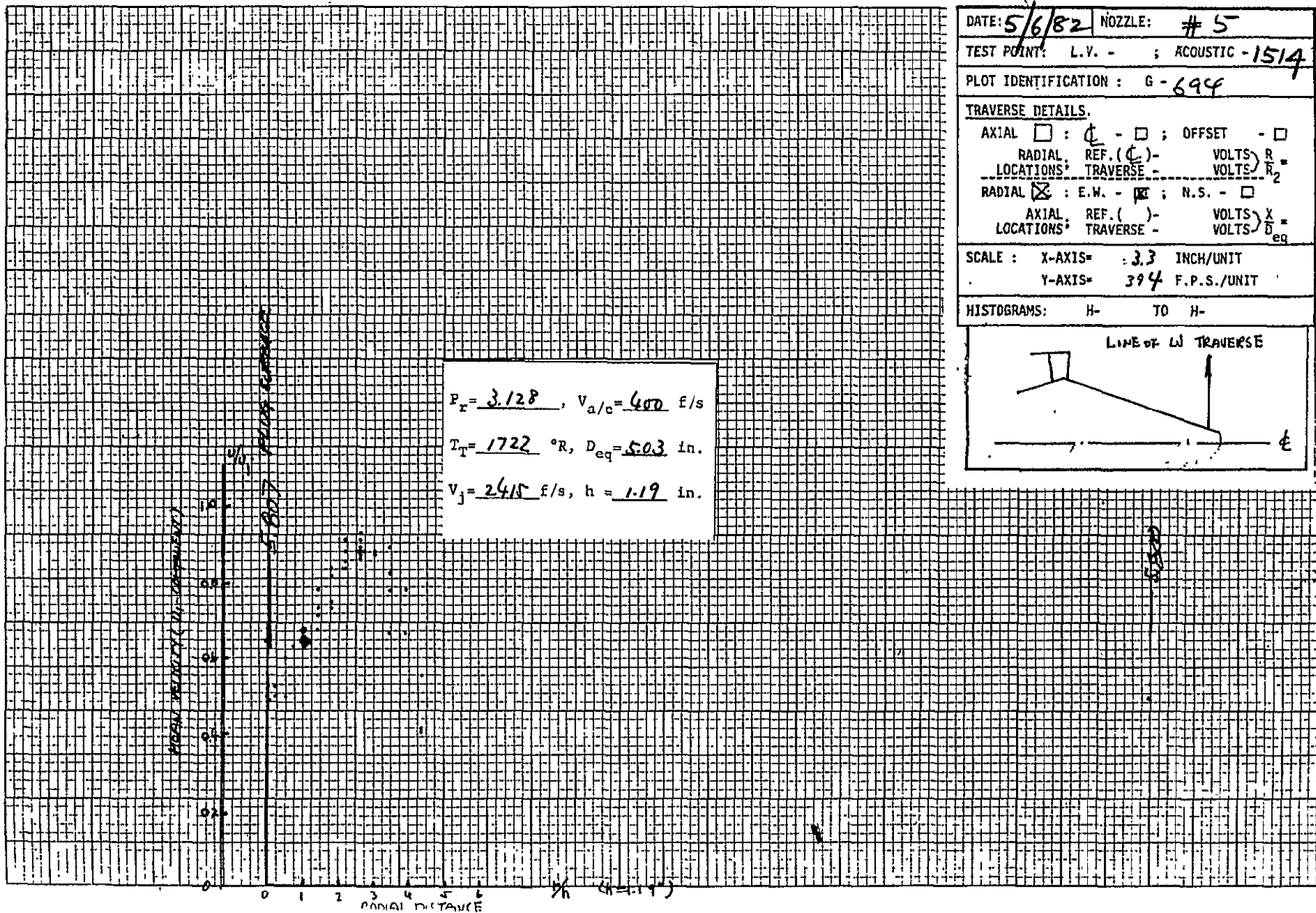


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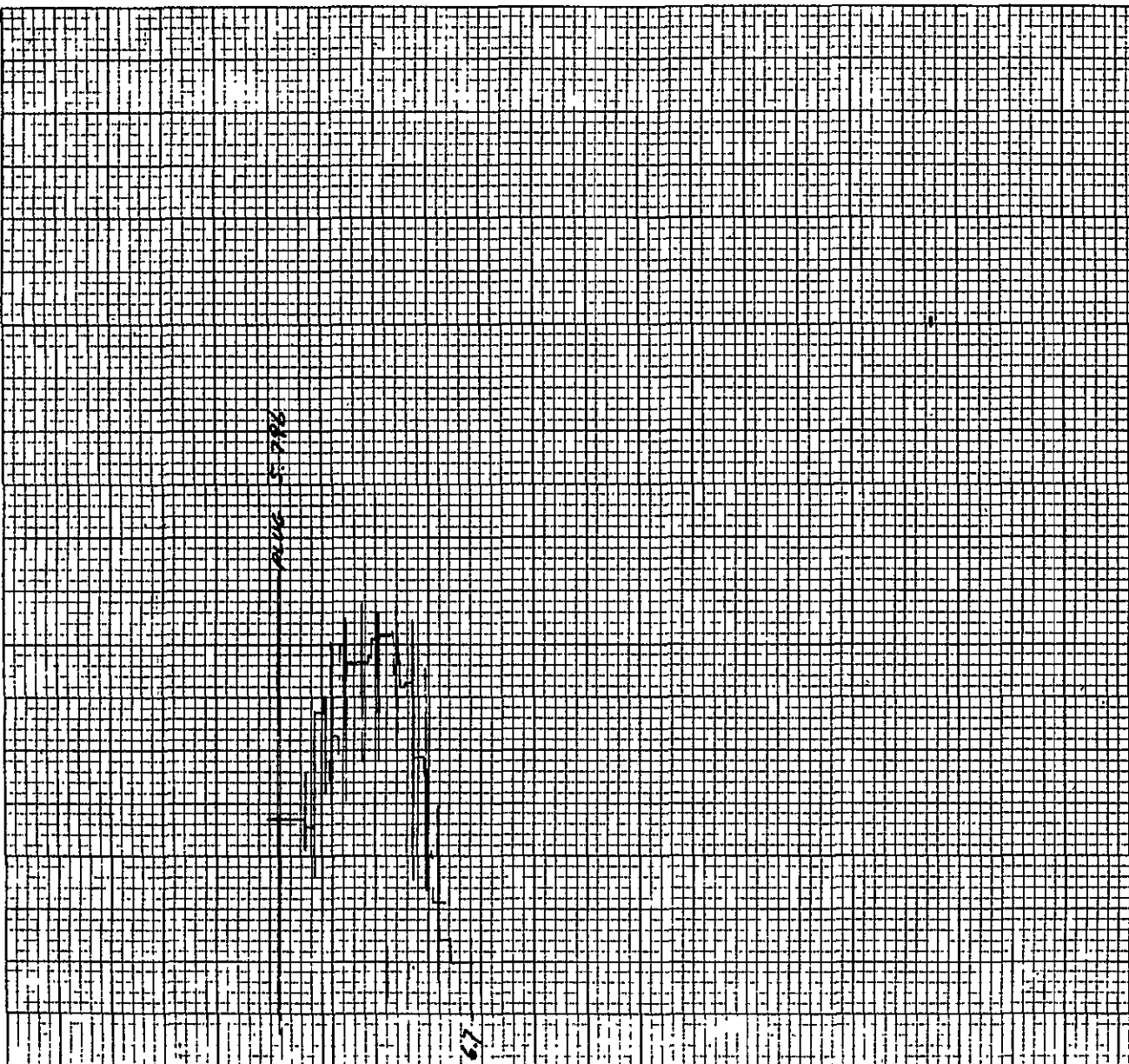
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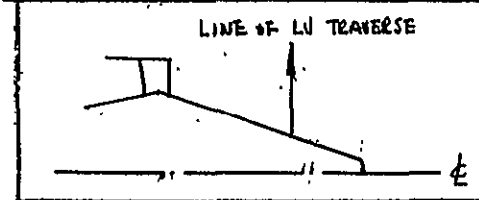
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DATE: 5/6/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G-695	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.3 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

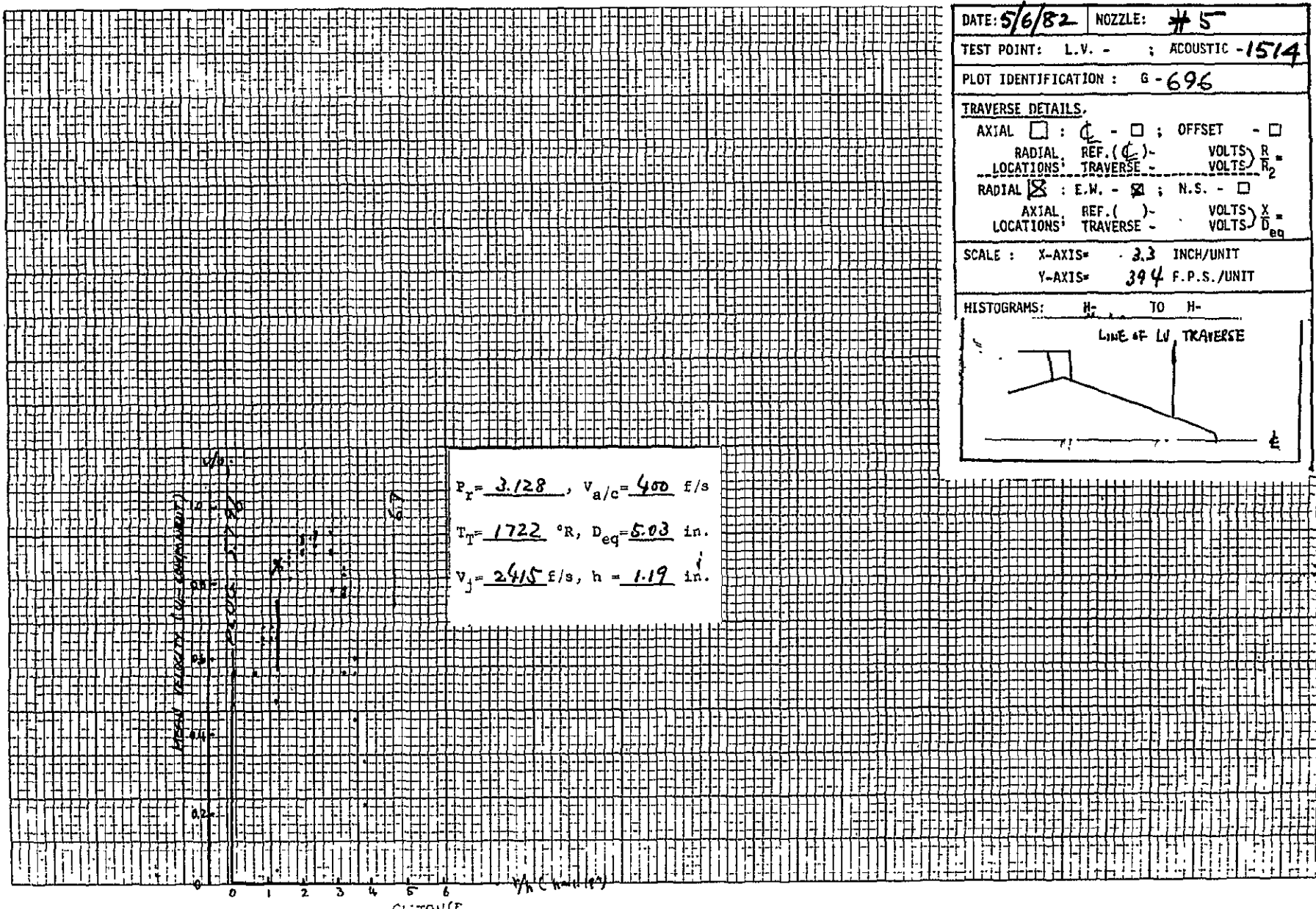


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RESEARCH DIVISION



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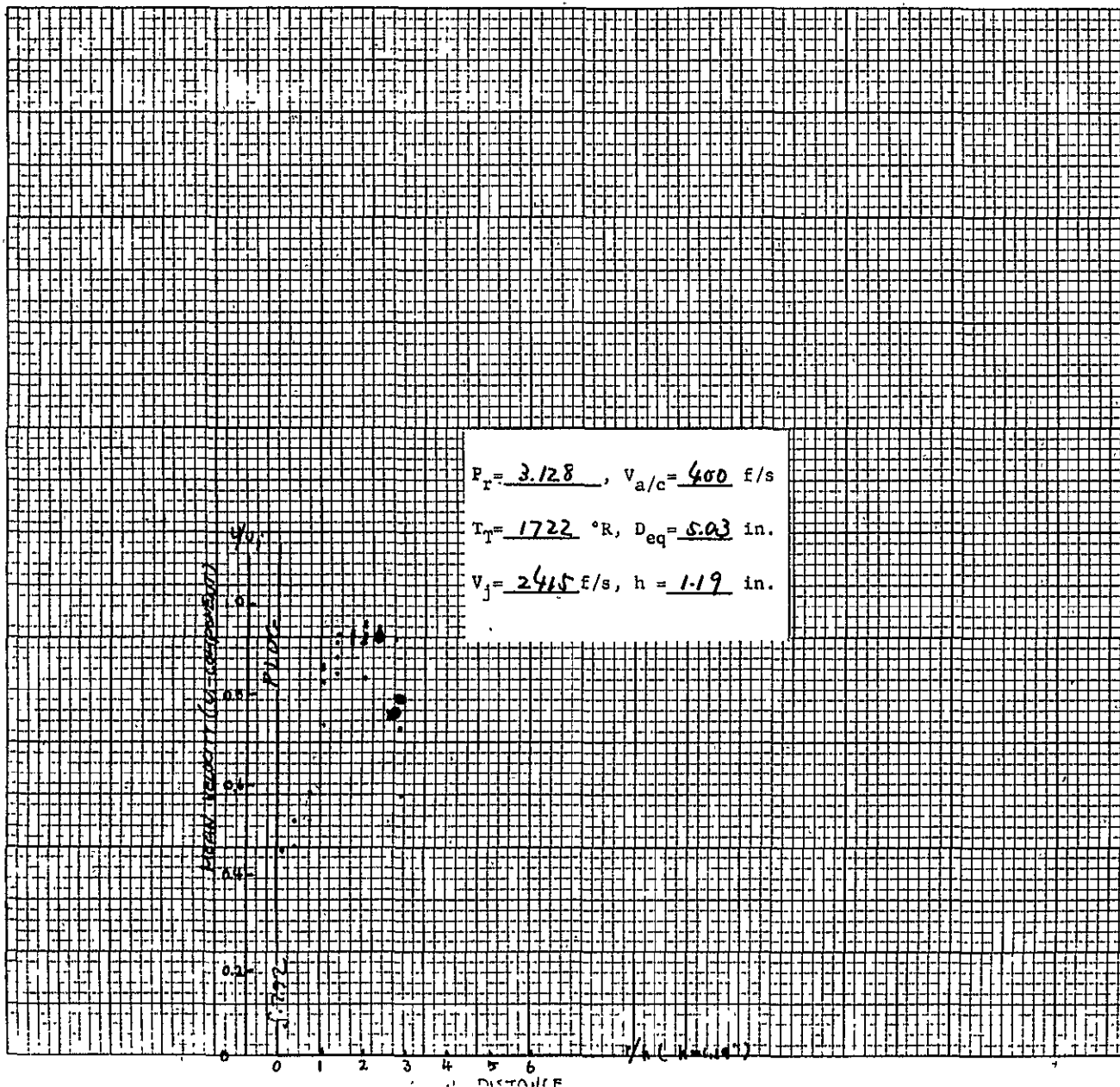
DATE: 5/6/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 1514
PLOT IDENTIFICATION: G - 697	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.3 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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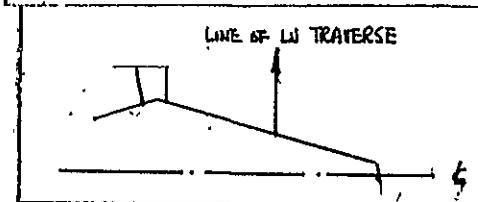
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DATE: 5/6/82	NOZZLE: # 5
TEST POINT: L.V. - ; ACOUSTIC - 1514	
PLOT IDENTIFICATION: G-698	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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DATE: 5/6/82 NOZZLE: # 5

TEST POINT: L.V. - ; ACOUSTIC - 1574

PLOT IDENTIFICATION: G - 699

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS* TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

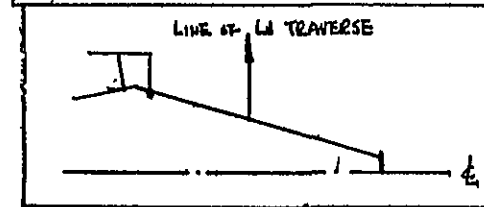
AXIAL REF. () - VOLTS X

LOCATIONS* TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 2.3 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

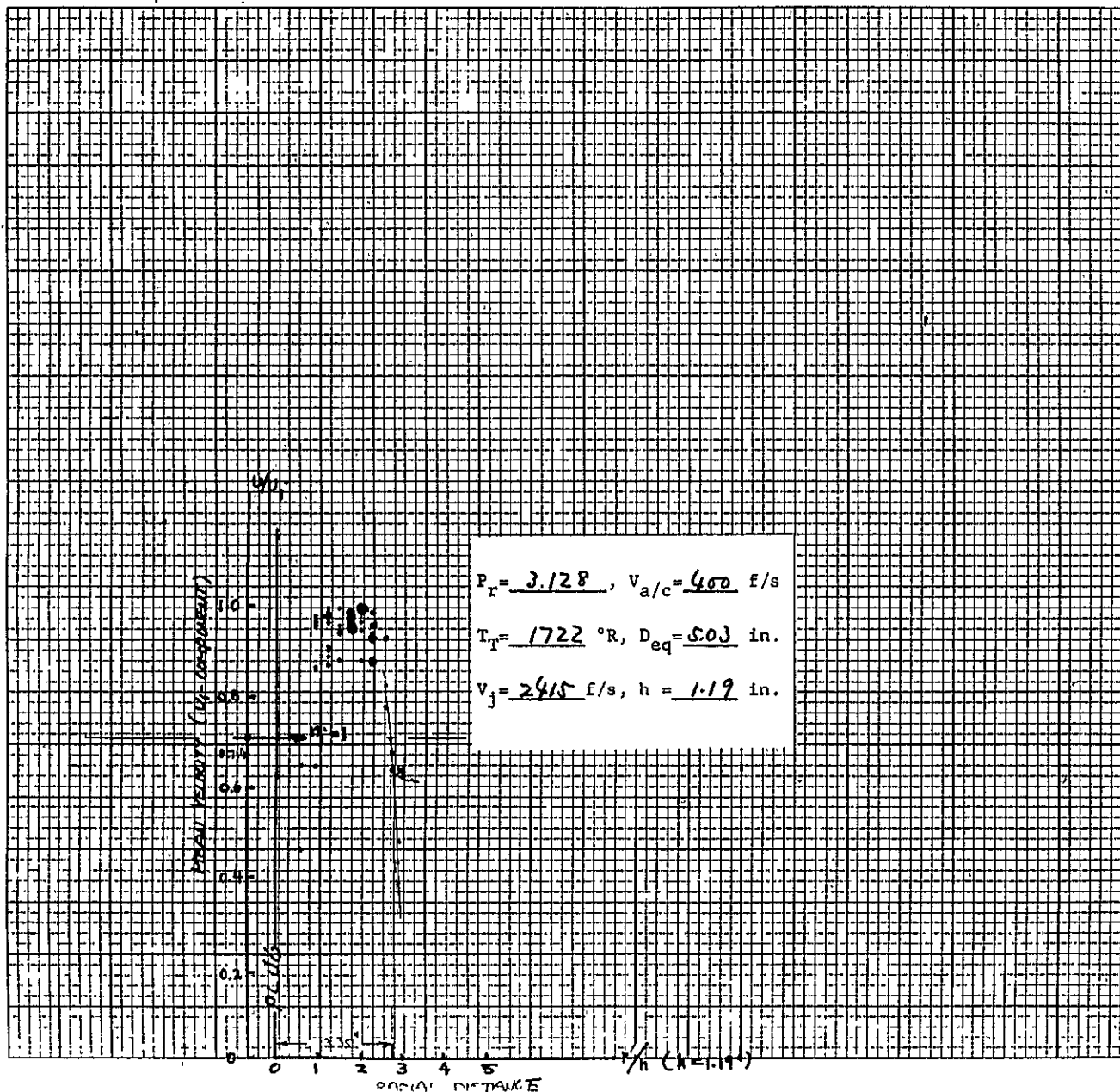


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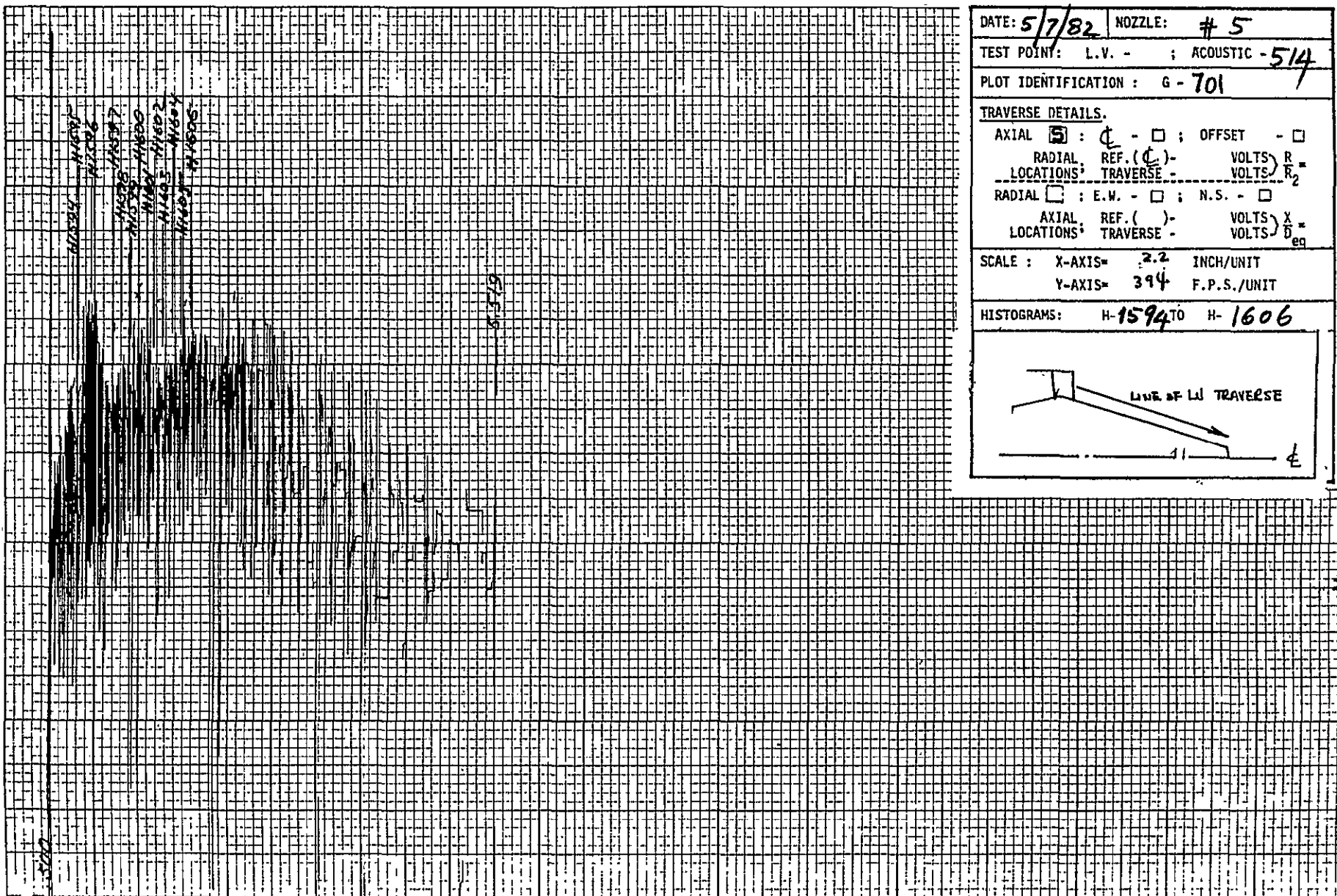
DATE: 5/6/82	NOZZLE: # 5
TEST POINT: L.V. - ; ACOUSTIC -1514	
PLOT IDENTIFICATION : G - 700	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.3 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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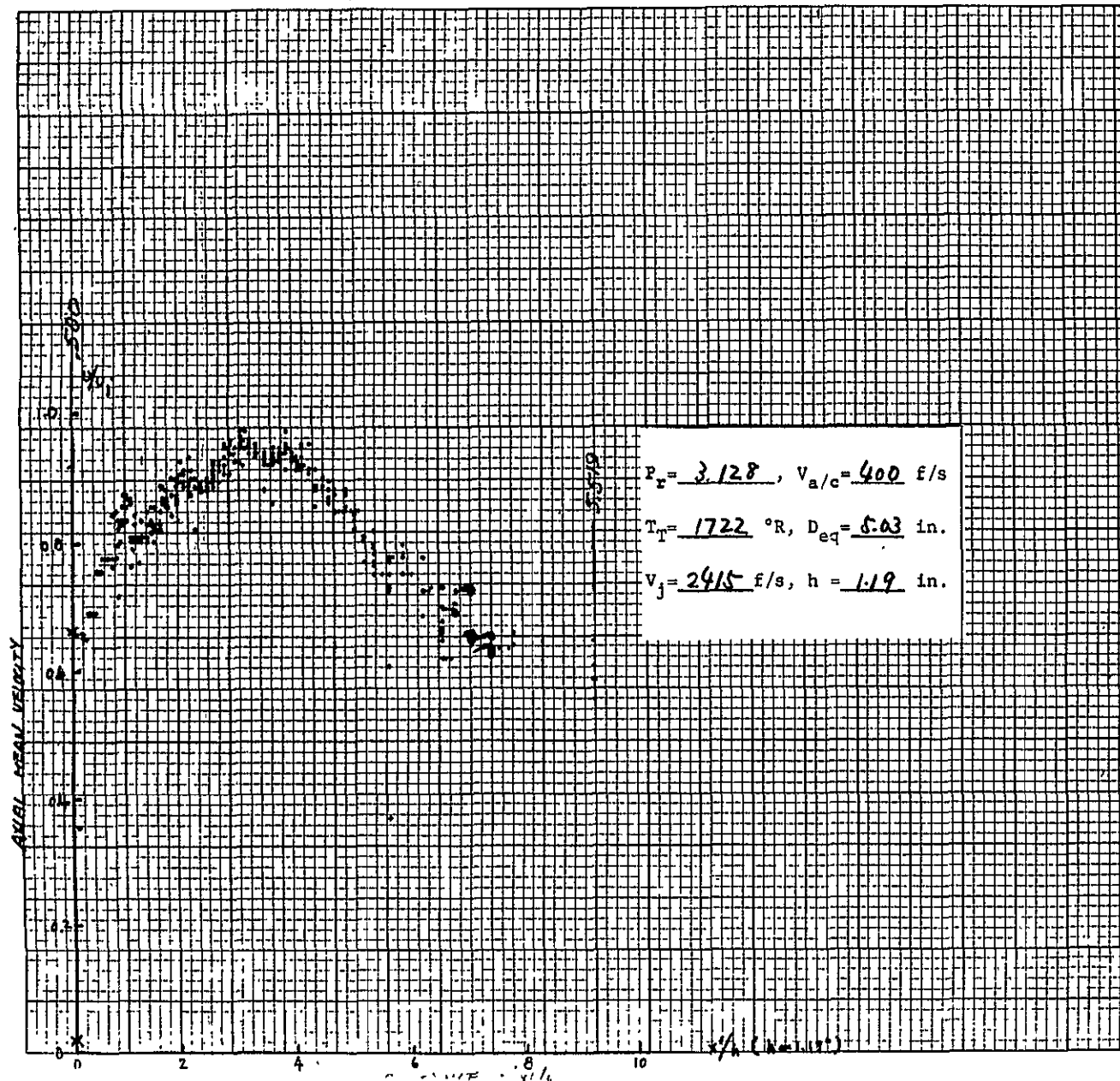
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1187

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DATE: 5/7/82	NOZZLE: # 5
TEST POINT: L.V. -	ACOUSTIC - 514
PLOT IDENTIFICATION: G - 701	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS R_1
LOCATIONS, TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS X
LOCATIONS, TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.2	INCH/UNIT
Y-AXIS= 394	F.P.S./UNIT
HISTOGRAMS: H-1594 TO H-1606	



DATE: 5/7/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-702

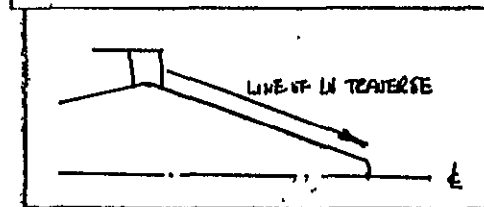
TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$ LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$ LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$

SCALE : X-AXIS = 2.2 INCH/UNIT

Y-AXIS = 294 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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TURB. HISTOGRAMS WILL BE REPEATED ON 5/10/82. SEE G-705

1.75 IN
1.50 IN
1.25 IN
1.00 IN
0.75 IN
0.50 IN
0.25 IN
0.00 IN

500

5500

DATE: 5/7/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-703

TRAVERSE DETAILS.

AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐

RADIAL REF. (C) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2

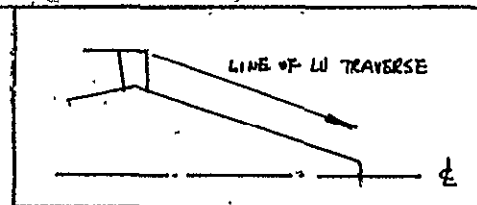
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS U_{eq}

SCALE: X-AXIS= 2.2 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

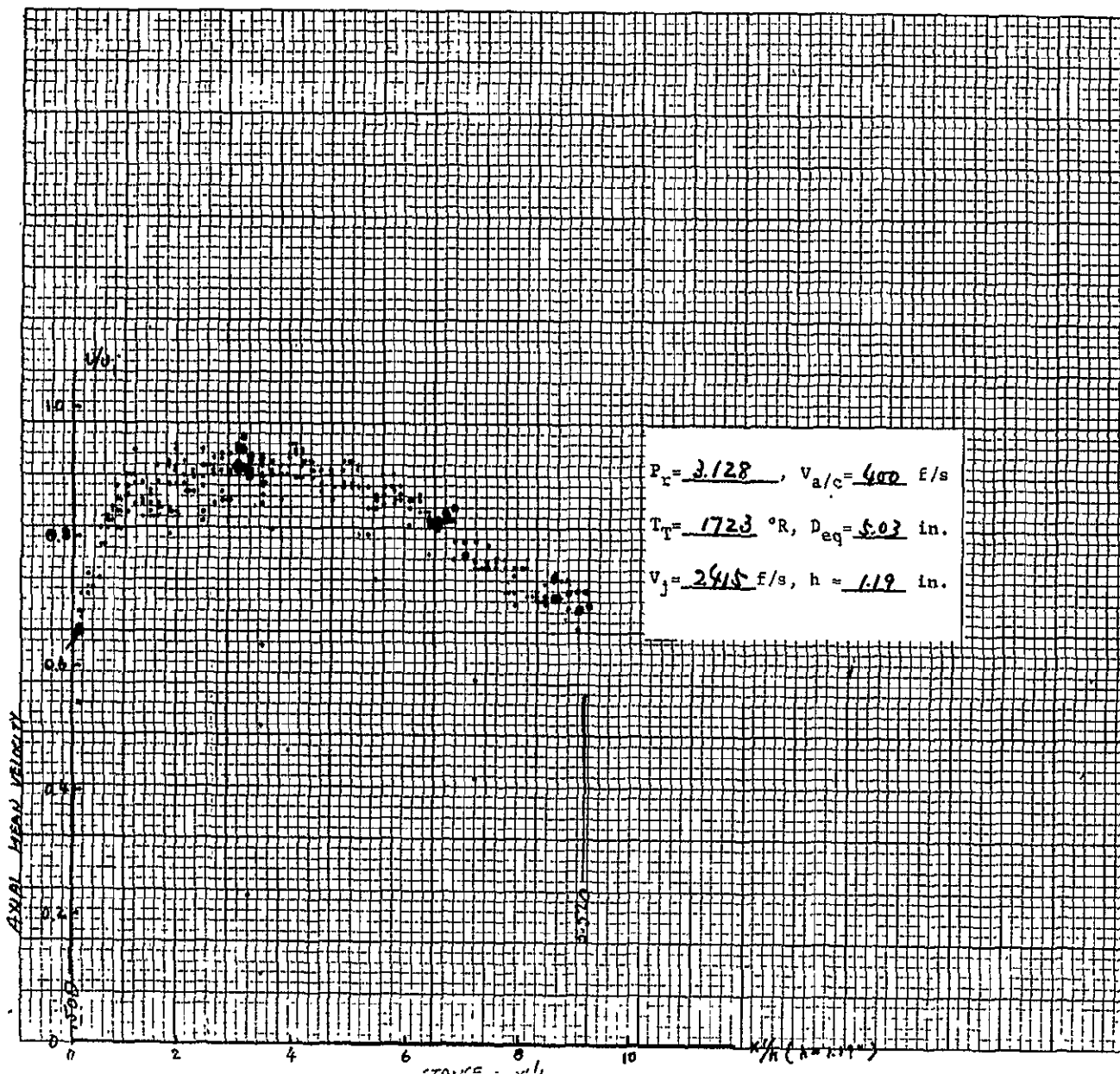


1011 AX No.

1190

NOTATION: ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

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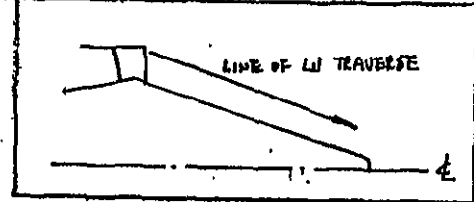


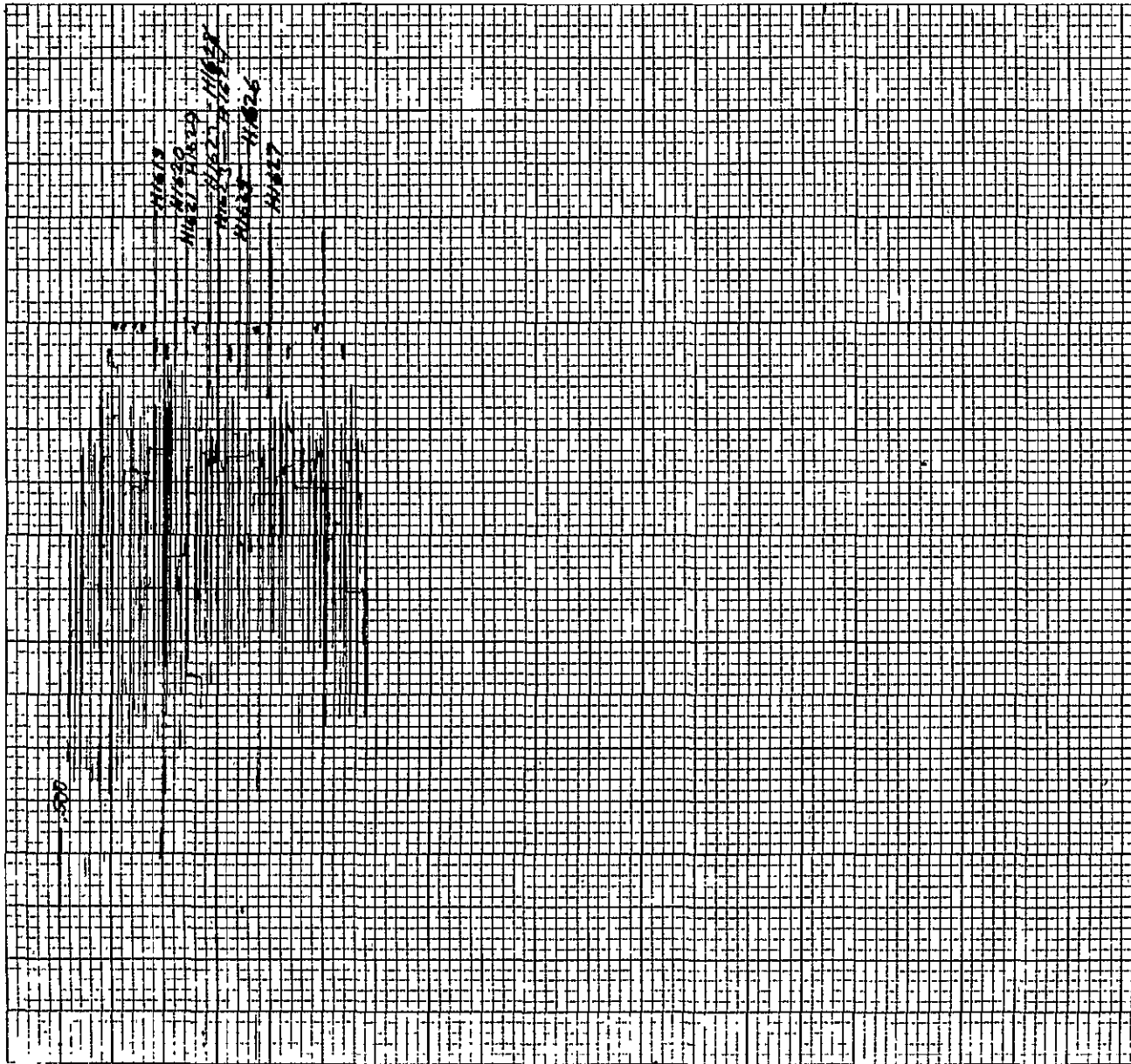
$P_c = 3.128$, $V_{a/c} = 400$ E/s

$T_T = 1723$ °R, $D_{eq} = 5.03$ in.

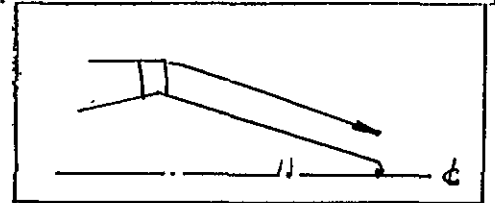
$V_j = 2415$ f/s, $h = 1.19$ in.

DATE: 5/7/82		NOZZLE: #5	
TEST POINT: L.V. -		ACOUSTIC - 514	
PLOT IDENTIFICATION: G - 704			
TRAVERSE DETAILS.			
AXIAL	<input checked="" type="checkbox"/>	OFFSET	<input type="checkbox"/>
RADIAL	REF. ()	VOLTS	$\frac{R}{R_2}$
LOCATIONS:	TRAVERSE	VOLTS	$\frac{R}{R_2}$
RADIAL	<input type="checkbox"/>	E.W. - <input type="checkbox"/>	N.S. - <input type="checkbox"/>
AXIAL	REF. ()	VOLTS	$\frac{X}{D_{eq}}$
LOCATIONS:	TRAVERSE	VOLTS	$\frac{X}{D_{eq}}$
SCALE: X-AXIS= 3.2		INCH/UNIT	
Y-AXIS= 394		F.P.S./UNIT	
HISTOGRAMS: H-		TO H-	



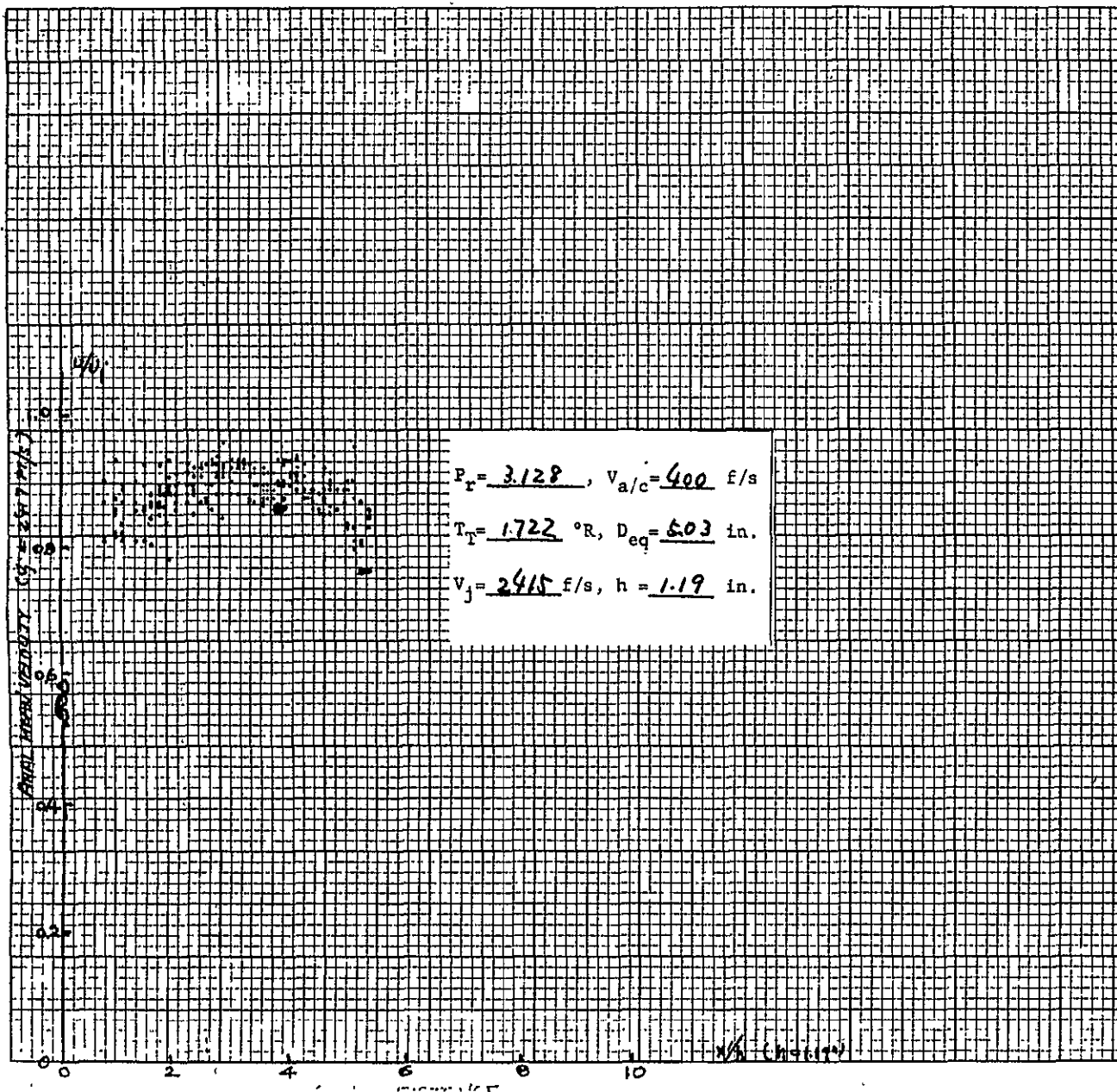


DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 574	
PLOT IDENTIFICATION: G - 705	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.2 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1619 TO H-1629	



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DATE: 5/10/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-706

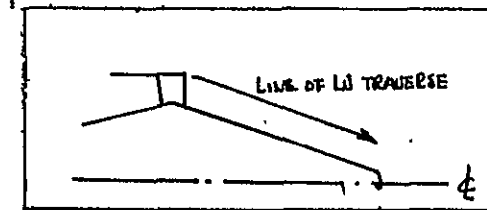
TRAVERSE DETAILS.

AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐RADIAL REF. (C) - VOLTS $\frac{R}{R_2}$ LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$ LOCATIONS TRAVERSE - VOLTS $\frac{X}{D_{eq}}$

SCALE: X-AXIS= 2.2 INCH/UNIT

Y-AXIS= 374 F.P.S./UNIT

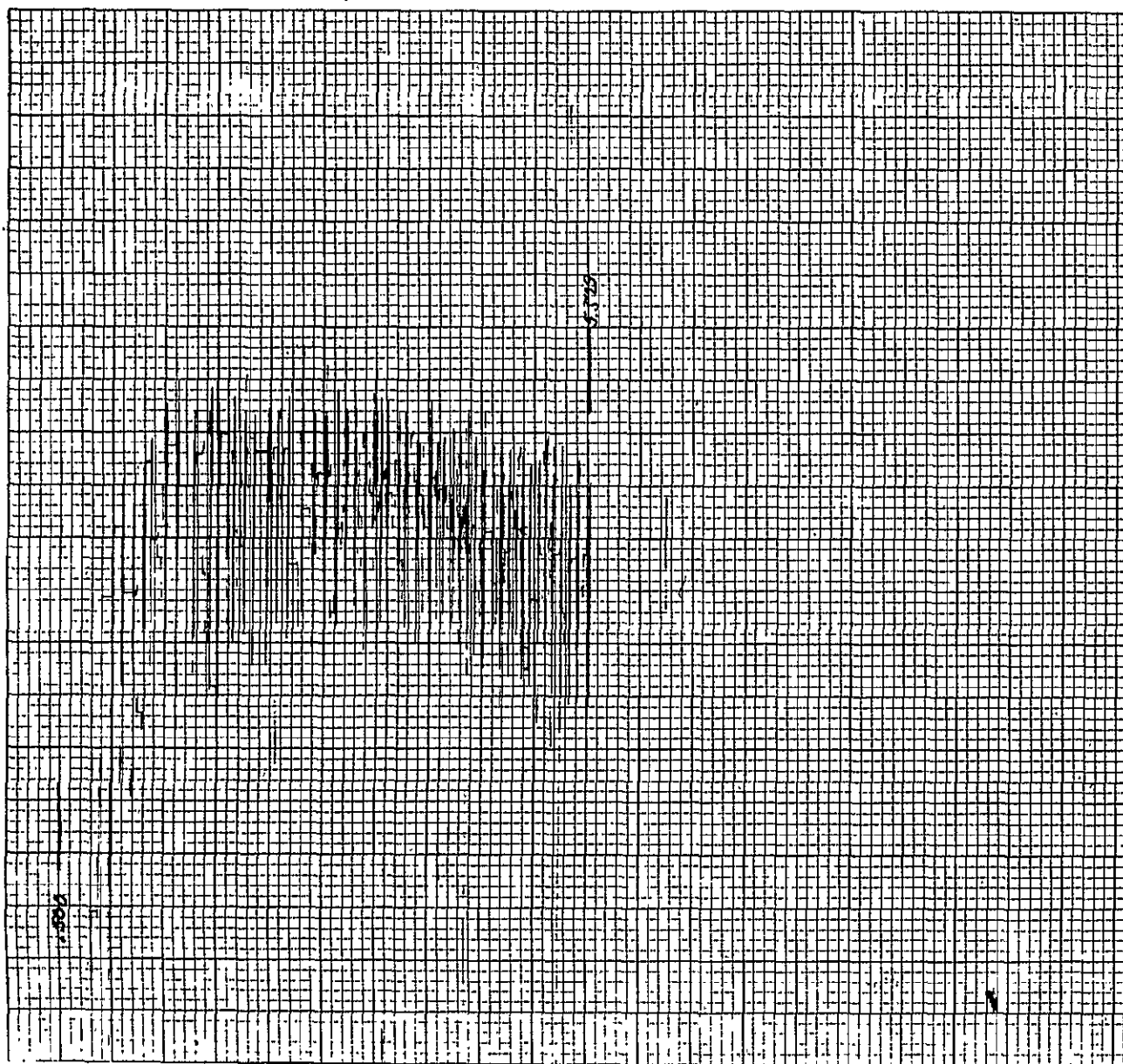
HISTOGRAMS: H- TO H-



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DATE: 5/10/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION : G - 707

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1 -

LOCATIONS* TRAVERSE - VOLTS R_2 -

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS X -

LOCATIONS* TRAVERSE - VOLTS D_{eq} -

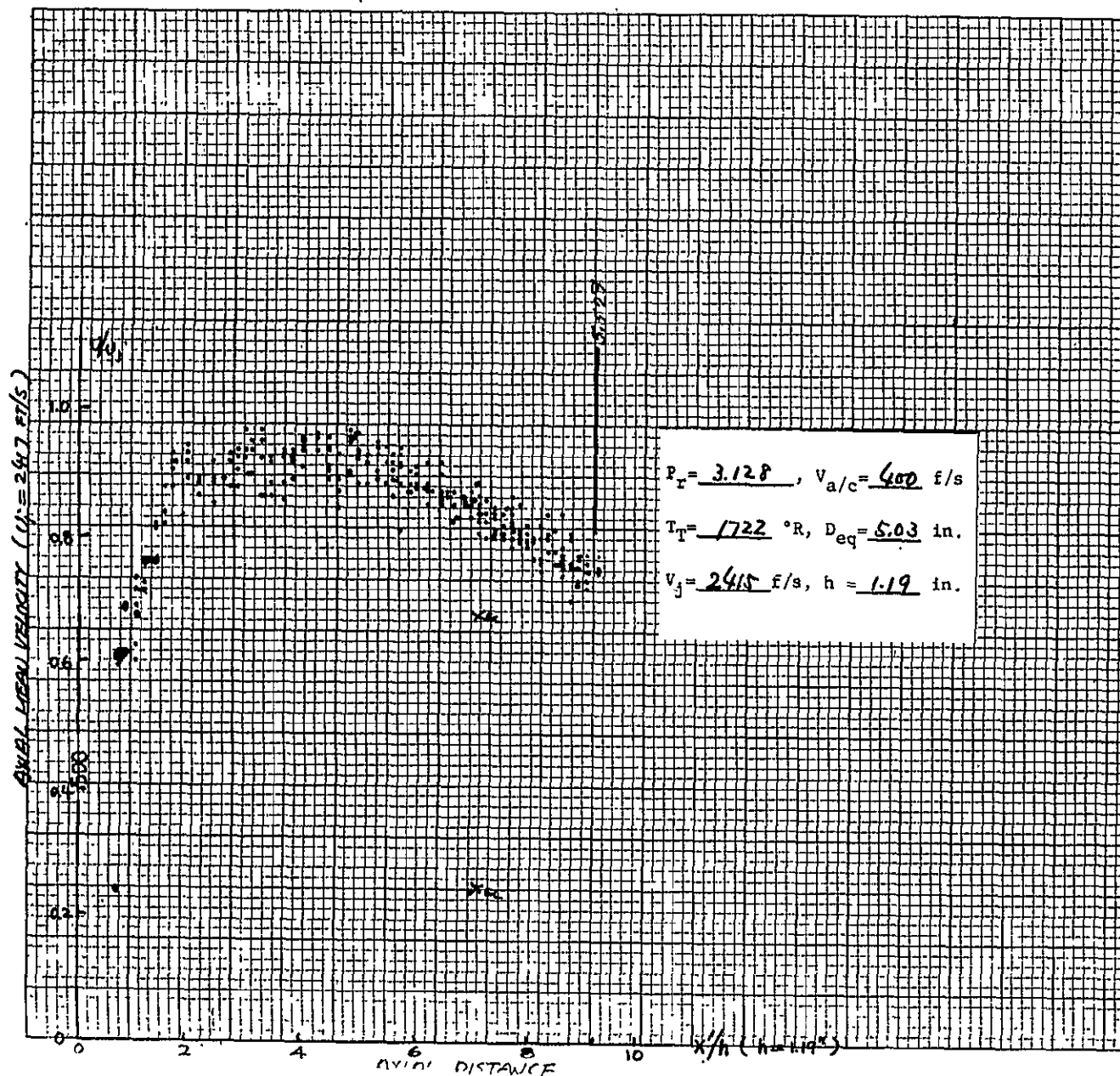
SCALE : X-AXIS= 2.2 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

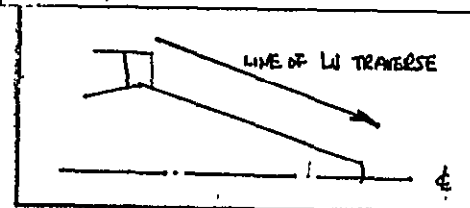
HISTOGRAMS: H- TO H-

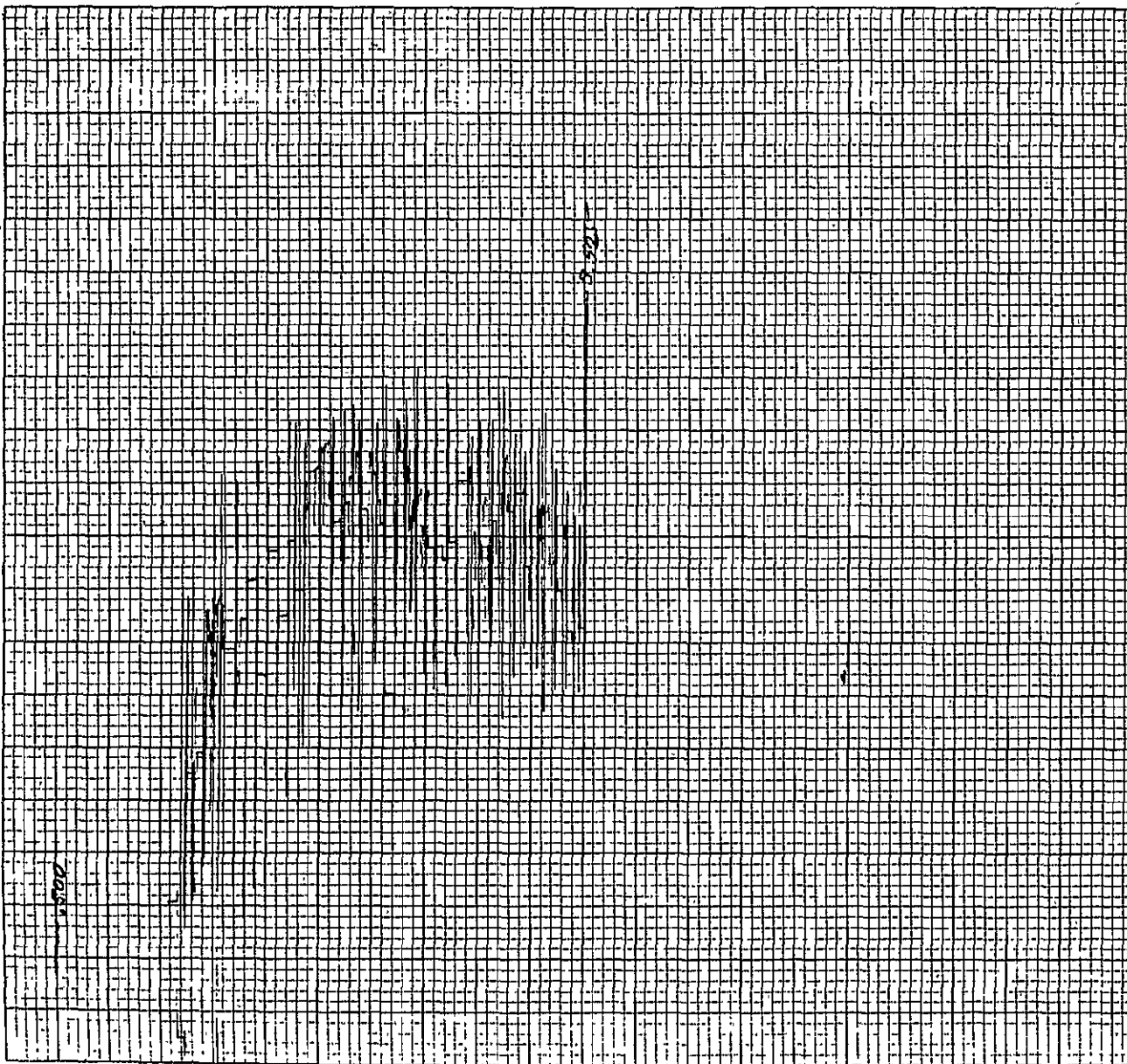
LINE OF W TRAVERSE

d

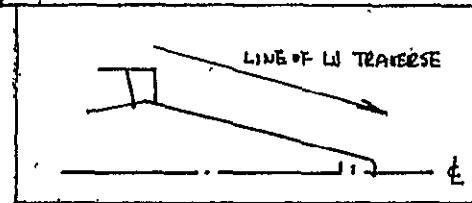


DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 514
PLOT IDENTIFICATION: G - 708	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 2.2 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

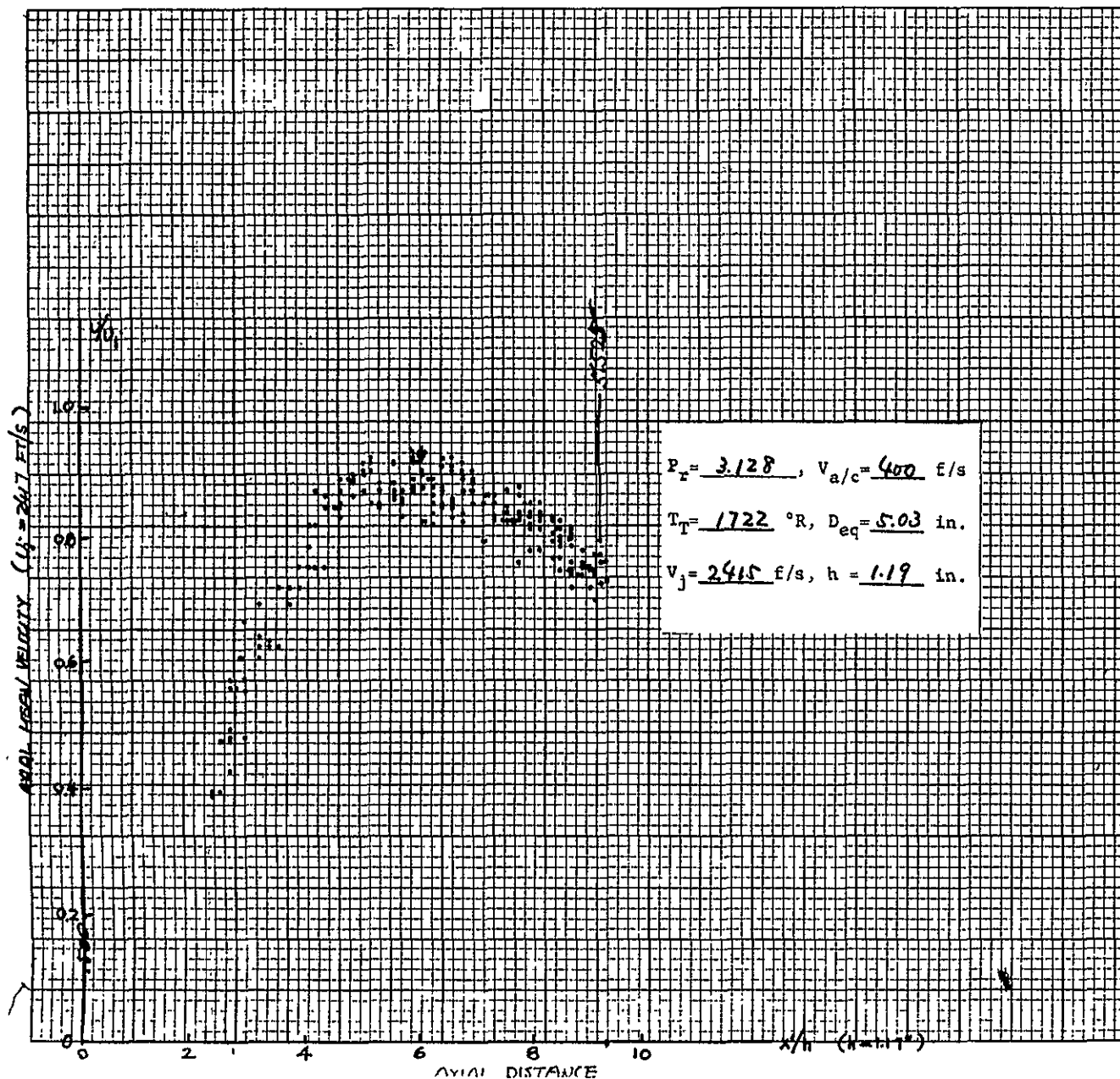




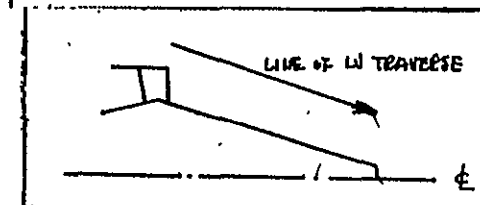
DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 514
PLOT IDENTIFICATION: G-709	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.2 INCH/UNIT	
Y-AXIS= 374 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION: G-710	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.2 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



1197

DATE: 5/10/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-711

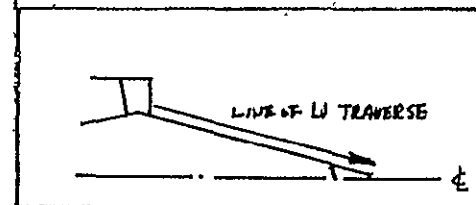
TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐RADIAL, REF. (ϕ) - VOLTS R
LOCATIONS, TRAVERSE - VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL, REF. () - VOLTS X
LOCATIONS, TRAVERSE - VOLTS D_{eq}

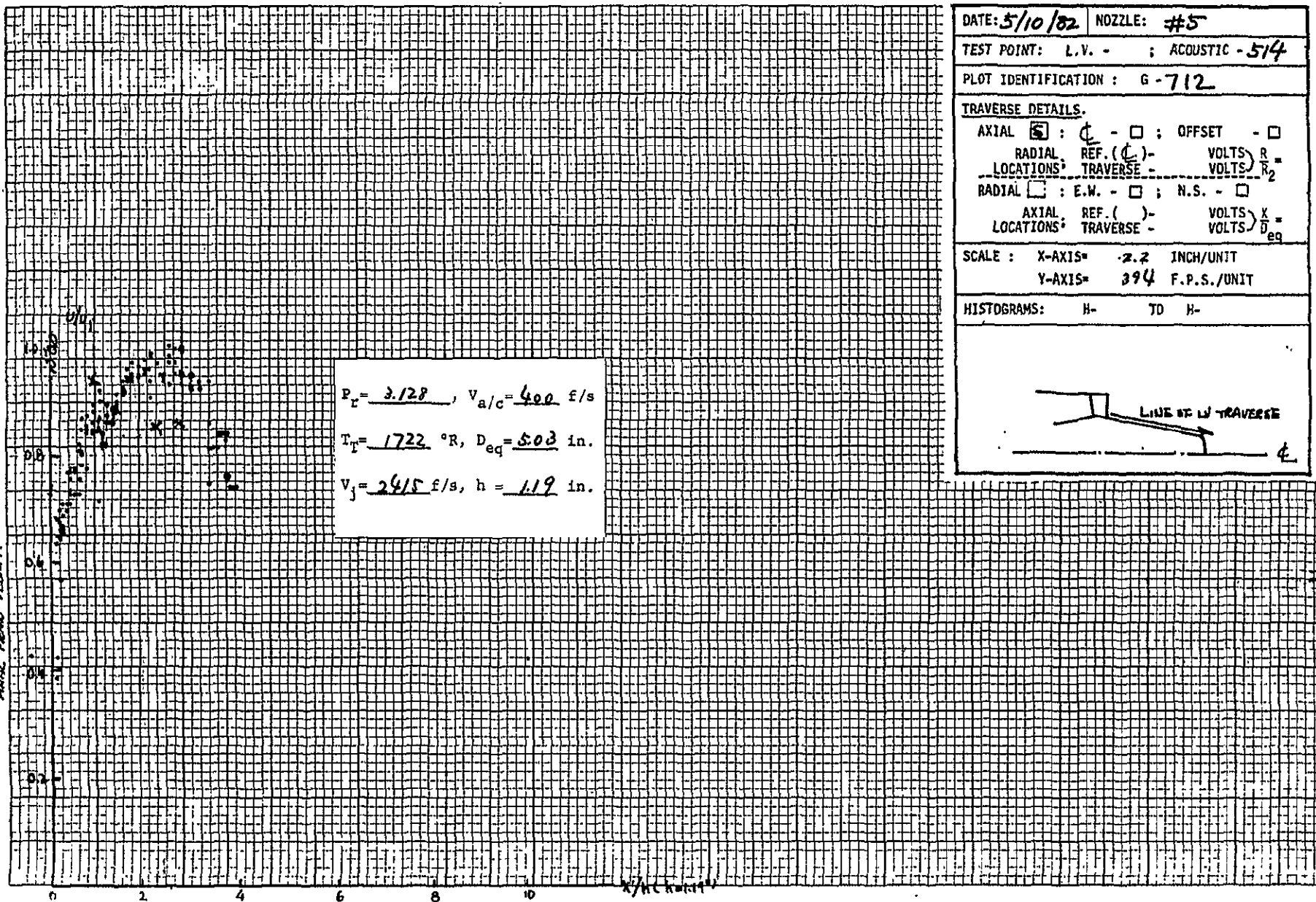
SCALE: X-AXIS = 2.2 INCH/UNIT

Y-AXIS = 374 F.P.S./UNIT

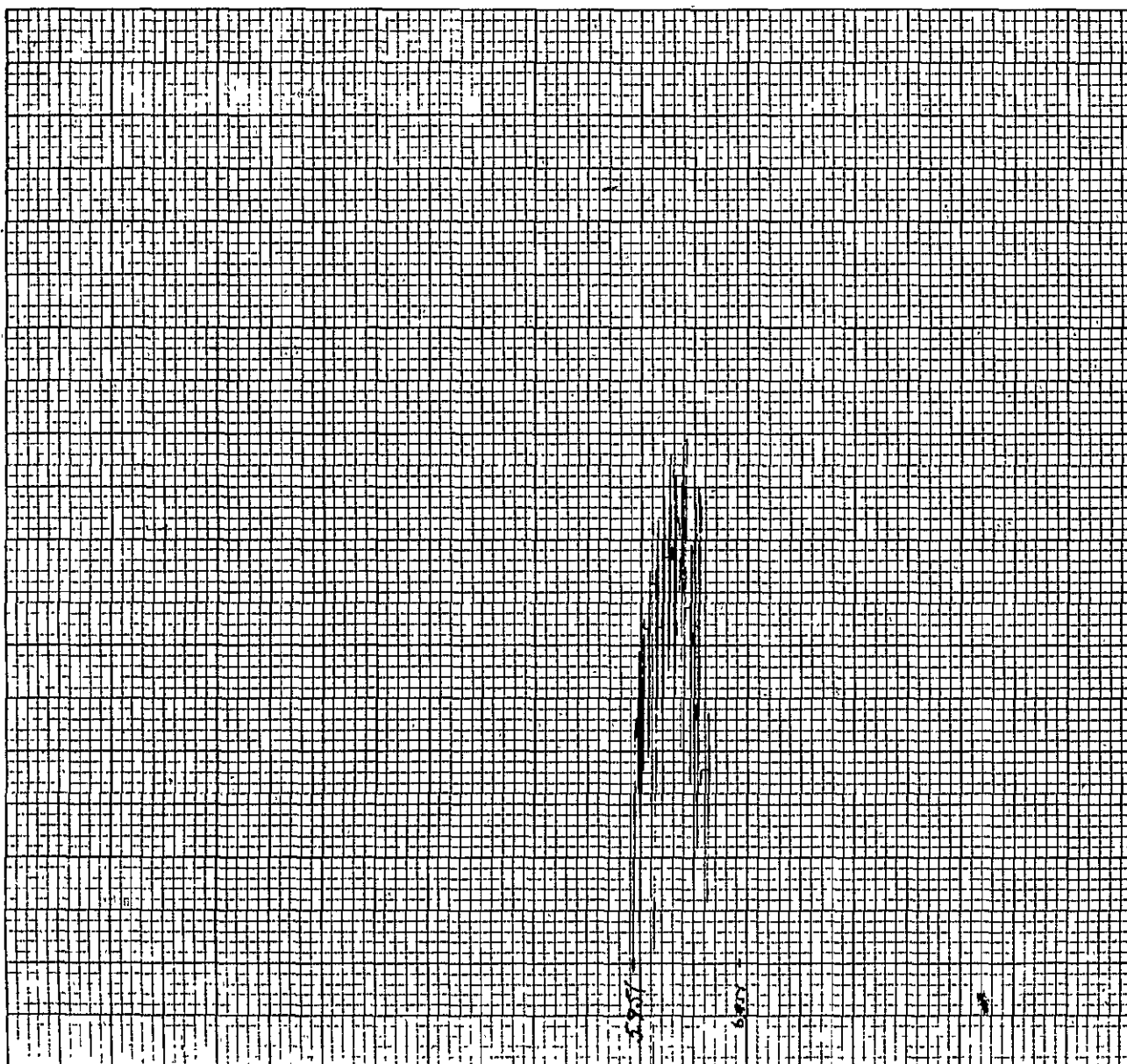
HISTOGRAMS: H- TO H-

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AXIAL MEAN VELOCITY



DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION : 8 - 713	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 2.74 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

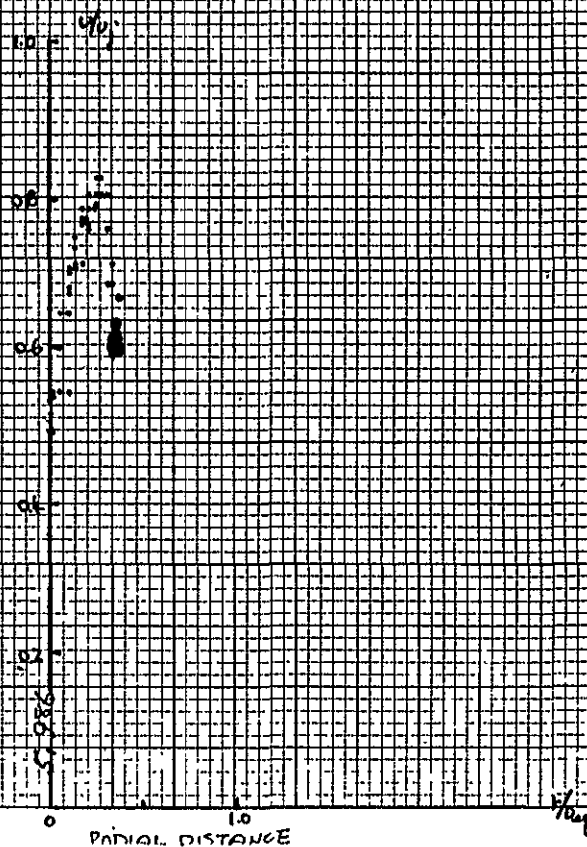


1011 XY 1101

1199

RECORDED CHART
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
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$P_r = 3.128$, $V_{a/c} = 400$ f/s
 $T_r = 1722$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2415$ f/s, $h = 1.19$ in.



DATE: 5/10/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-714

TRAVERSE DETAILS.

AXIAL	<input type="checkbox"/>	:	ϕ	-	<input type="checkbox"/>	; OFFSET	-	<input type="checkbox"/>
RADIAL			REF. (ϕ)	-			VOLTS	R
LOCATIONS			TRAVERSE	-			VOLTS	R ₂

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL			REF. (ϕ)	-			VOLTS	X
LOCATIONS			TRAVERSE	-			VOLTS	D _{eq}

SCALE : X-AXIS= 3.32 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

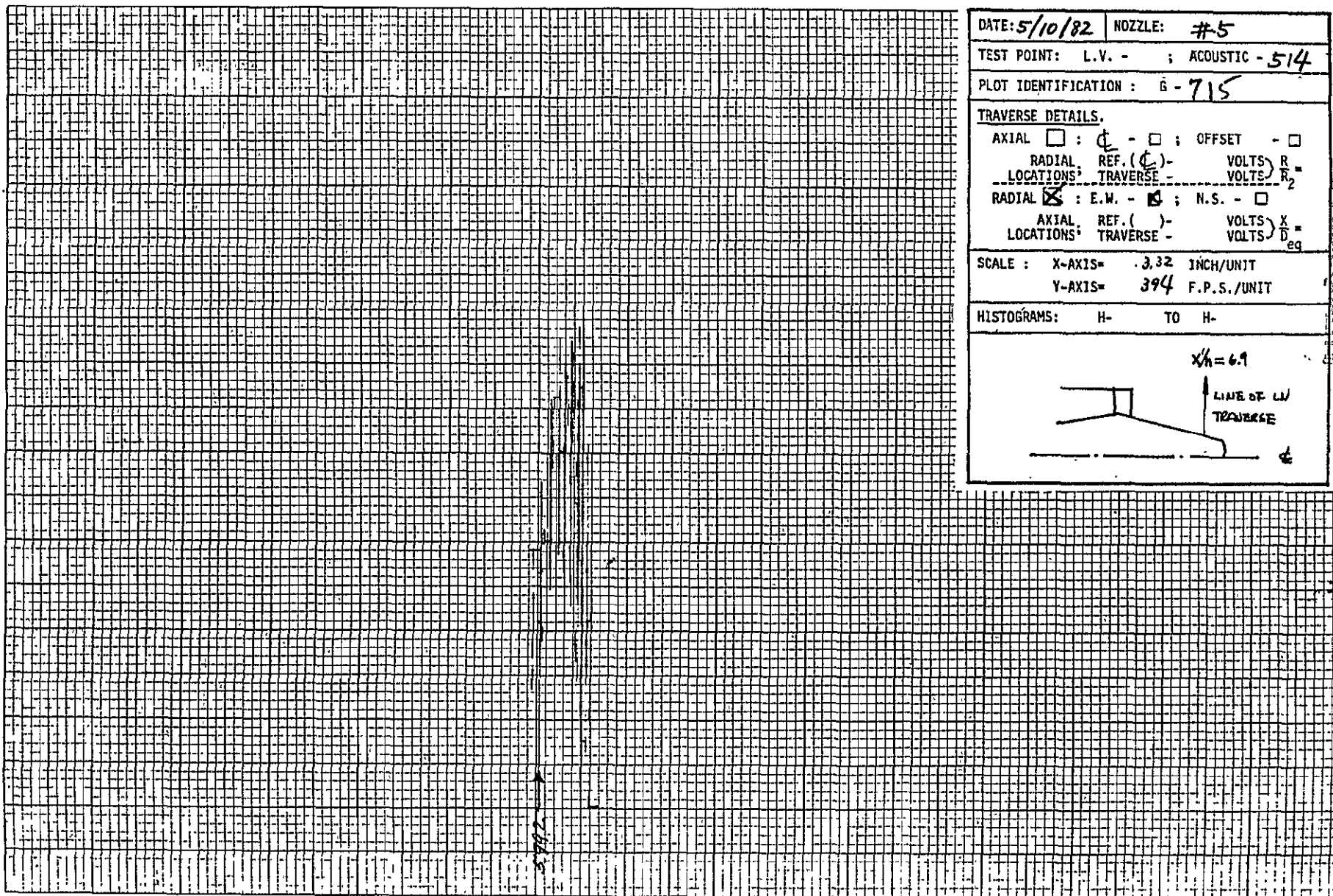
HISTOGRAMS: H- TO H-

$x/h = 0.0$

LINE OF W TRAVERSE

ϕ

DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION: G - 715	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= .332 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



1011 AX 70

1201

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1202

$P_r = 3.128$, $v_{a/c} = 400$ f/s
 $T_T = 1722$ °R, $D_{eq} = 5.08$ in.
 $v_j = 2415$ f/s, $h = 1.19$ in.

10

0.8

0.6

0.4

0.2

0

RADIAL DISTANCE

1.0

DATE: 5/10/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-716

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1 LOCATIONS TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. (ϕ) - VOLTS X LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

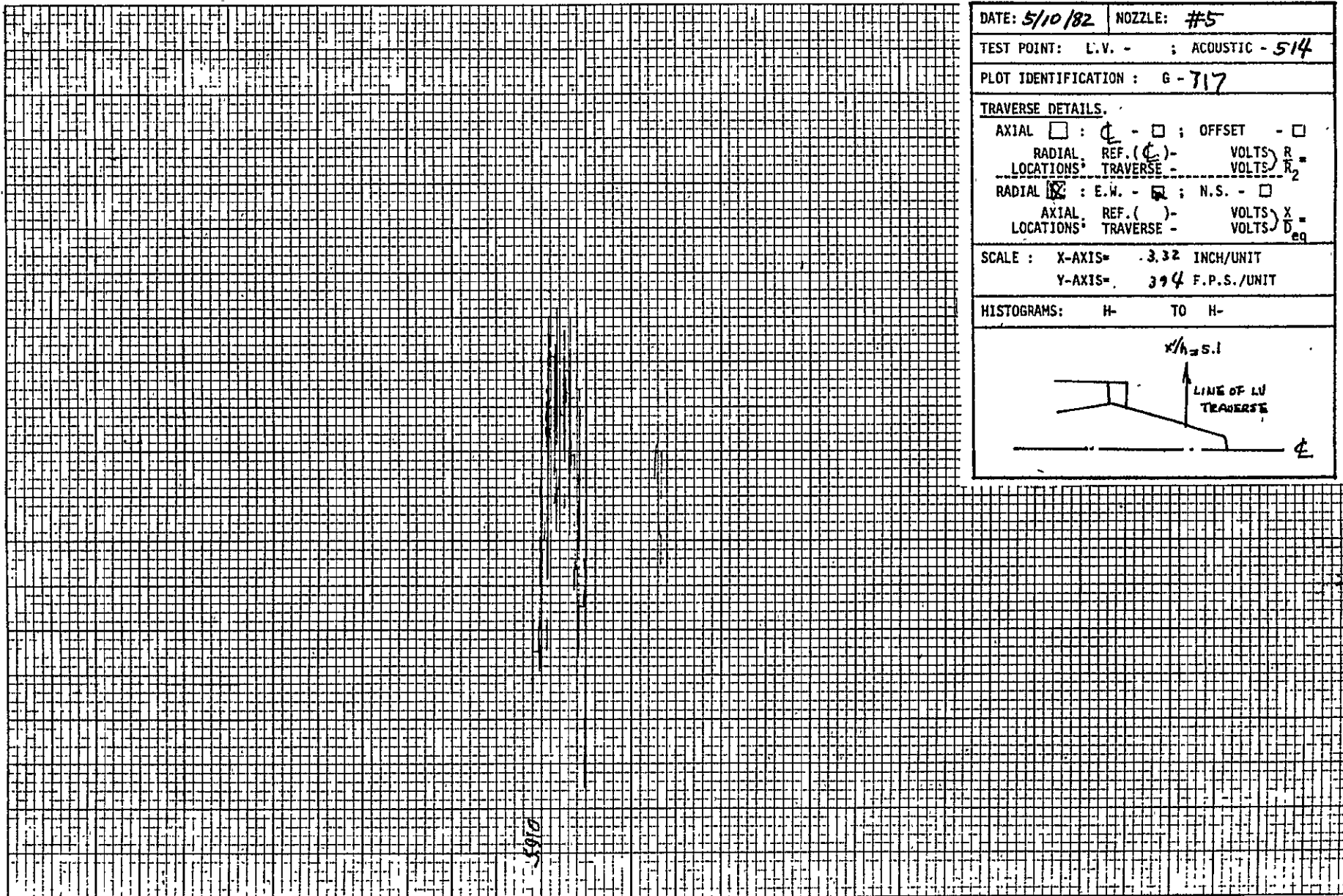
 $x/h = 0.9$ LINE OF LV
TRAVERSE ϕ

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1011 AX 704

1203

GRAPHIC CONTROL CORPORATION
BRIDGE PLANT, NEW YORK
GRAPHIC CONTROL CORPORATION

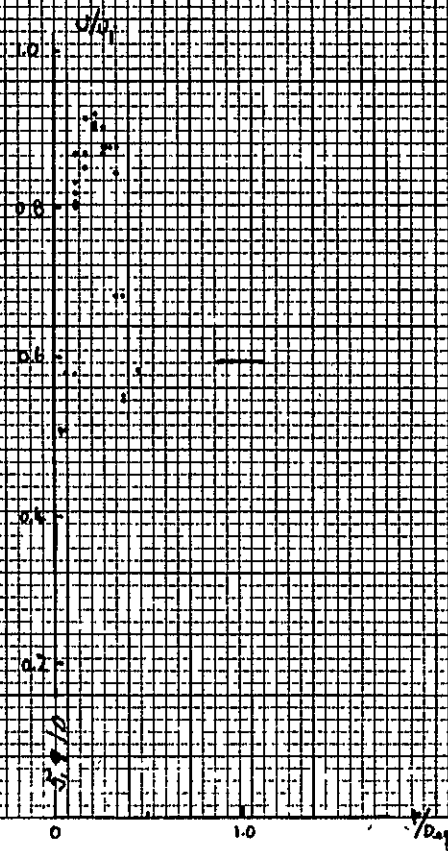


DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION: G-717	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= .332 INCH/UNIT	
Y-AXIS= .394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$$P_r = \underline{3.128}, v_{a/c} = \underline{400} \text{ f/s}$$

$$T_T = \underline{1722} \text{ }^\circ\text{R}, D_{eq} = \underline{5.03} \text{ in.}$$

$$V_j = \underline{2415} \text{ f/s}, h = \underline{1.19} \text{ in.}$$



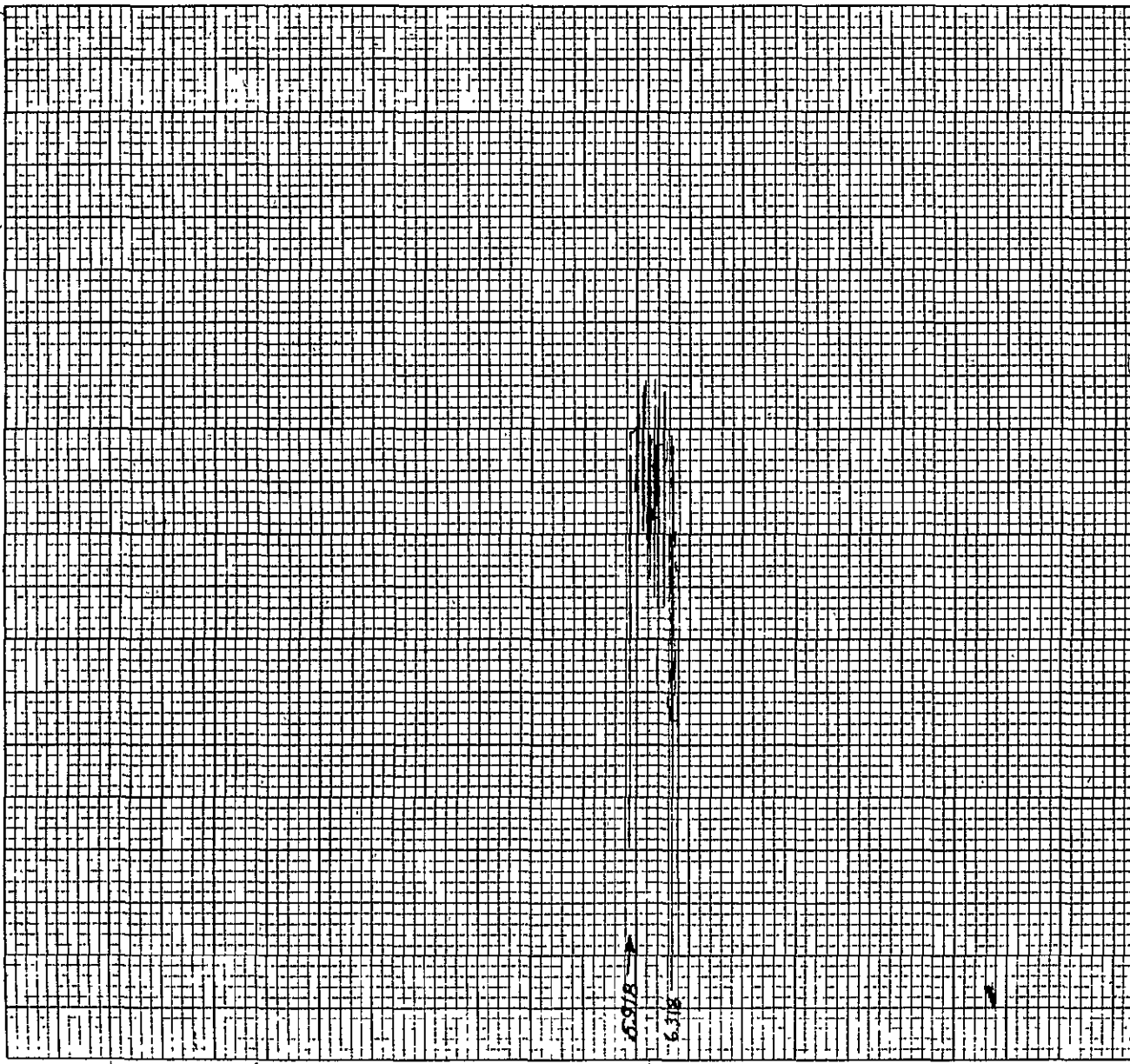
DATE: <u>5/10/82</u>	NOZZLE: <u>#5</u>
TEST POINT: L.V. - ; ACOUSTIC - <u>514</u>	
PLOT IDENTIFICATION: <u>G-718</u>	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <u>CL</u> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<u>CL</u>) -	VOLTS <u>R</u>
LOCATIONS: TRAVERSE -	VOLTS <u>R2</u>
RADIAL <input checked="" type="checkbox"/> : E.W. - <u>W</u> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS <u>X</u>
LOCATIONS: TRAVERSE -	VOLTS <u>D_eq</u>
SCALE : X-AXIS= <u>3.72</u> INCH/UNIT	
Y-AXIS= <u>394</u> F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1011 AX OM

1205

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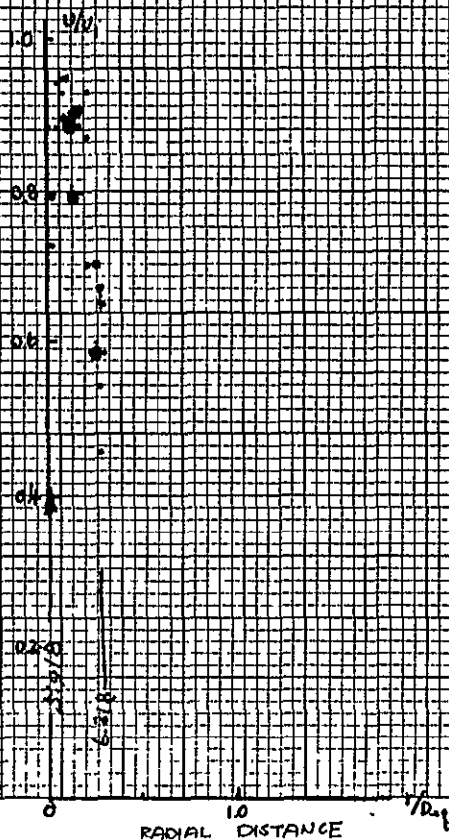


DATE: 5/10/82		NOZZLE: #5	
TEST POINT: L.V. -		ACOUSTIC - 514	
PLOT IDENTIFICATION: G - 719			
TRAVERSE DETAILS.			
AXIAL <input type="checkbox"/>	: ϕ - <input type="checkbox"/>	OFFSET	- <input type="checkbox"/>
RADIAL	REF. (ϕ) -	VOLTS	R_2
LOCATIONS	TRAVERSE -	VOLTS	R_2
RADIAL <input checked="" type="checkbox"/>	: E.W. - <input type="checkbox"/>	N.S. - <input type="checkbox"/>	
AXIAL	REF. () -	VOLTS	X_{eq}
LOCATIONS	TRAVERSE -	VOLTS	X_{eq}
SCALE: X-AXIS=		3.32 INCH/UNIT	
Y-AXIS=		394 F.P.S./UNIT	
HISTOGRAMS:		H- TO H-	
<p>$\phi/h = 3.2$</p>			

$$P_r = 3.128, V_{a/c} = 400 \text{ f/s}$$

$$T_r = 1722^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2415 \text{ f/s}, h = 1.19 \text{ in.}$$



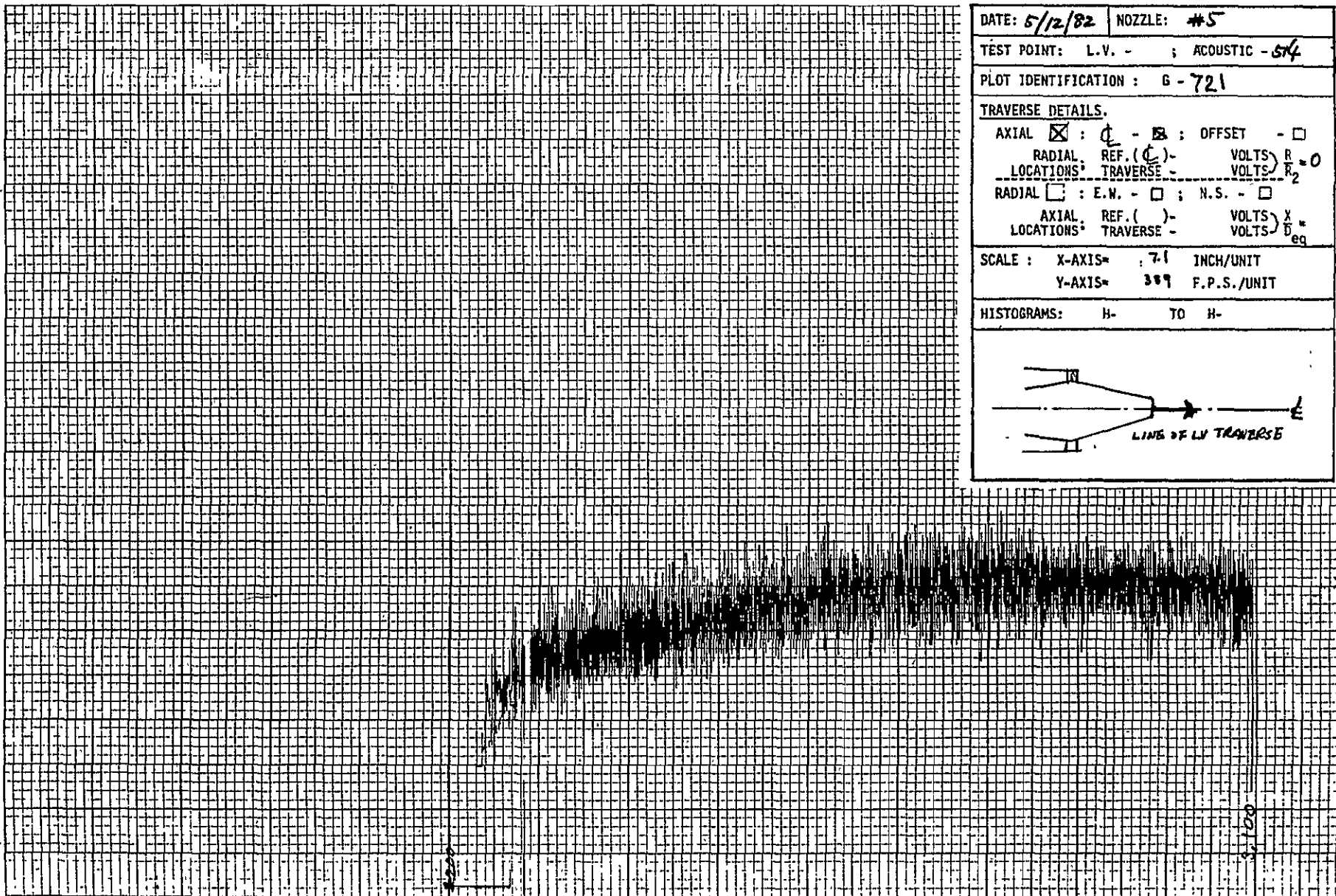
DATE: 5/10/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION: G - 720	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1011 AX ON

1207

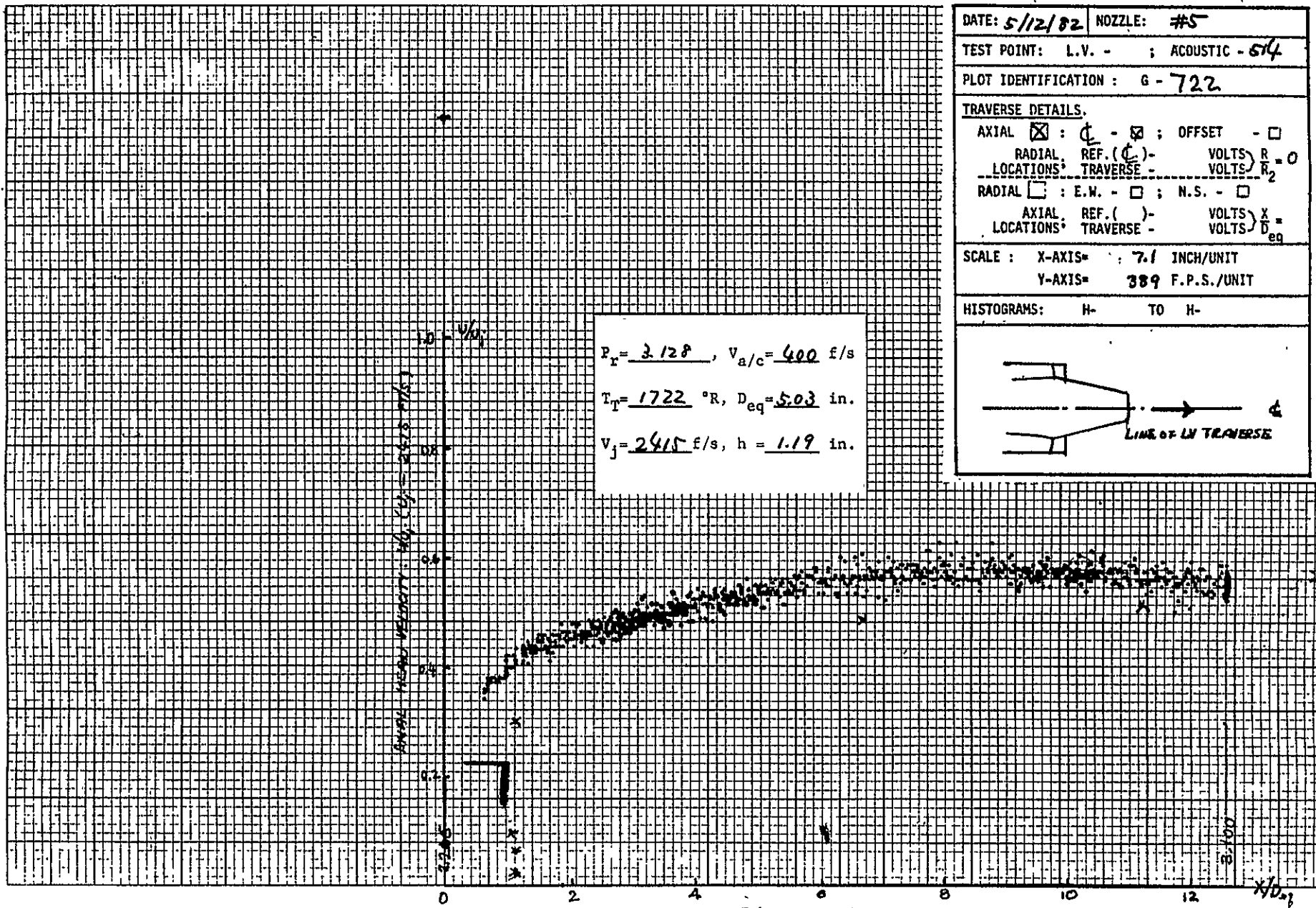
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BUFFALO, NEW YORK
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DATE: 5/12/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 514
PLOT IDENTIFICATION: G-721	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS $R_1 = 0$
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 7.1 INCH/UNIT	
Y-AXIS = 389 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$P_r = 3.128$, $V_{a/c} = 400$ f/s
 $T_T = 1722$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2415$ f/s, $h = 1.19$ in.

DATE: 5/12/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 514
PLOT IDENTIFICATION: G - 722	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $R_1 = 0$
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 7.1 INCH/UNIT	
Y-AXIS = 389 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

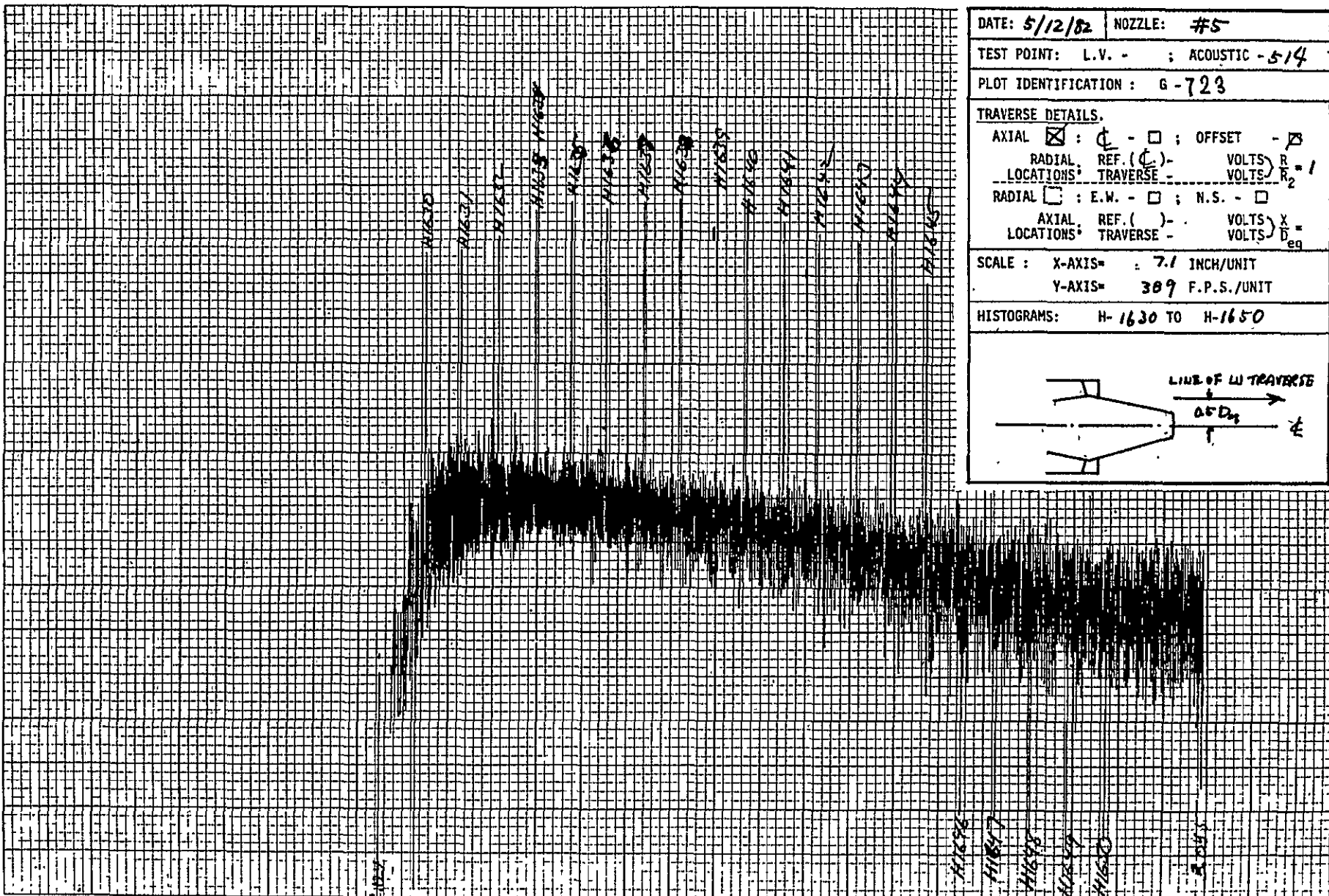


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1011 AX 04

1209

NAVY RESEARCH
OFFICE OF NAVAL RESEARCH
WASHINGTON, D.C. 20340



DATE: 5/12/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-723

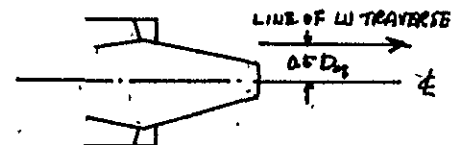
TRAVERSE DETAILS.

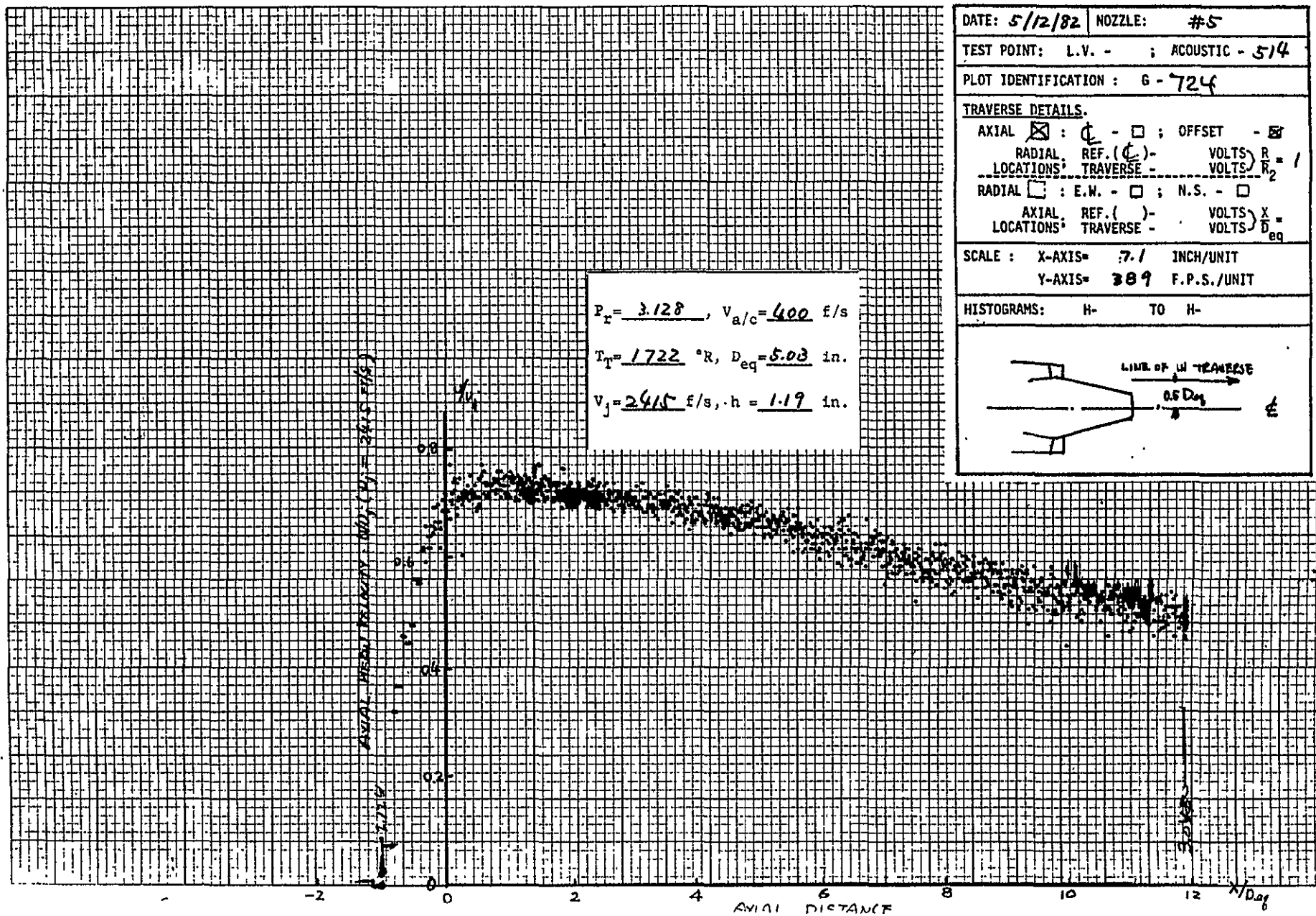
AXIAL ☒ : ϕ - \square ; OFFSET - ϕ
 RADIAL REF. (ϕ) - VOLTS $R_2 = 1$
 LOCATIONS* TRAVERSE - VOLTS $R_2 = 1$
 RADIAL ☐ : E.W. - \square ; N.S. - \square
 AXIAL REF. () - VOLTS X_{eq}
 LOCATIONS* TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= : 7.1 INCH/UNIT

Y-AXIS= 309 F.P.S./UNIT

HISTOGRAMS: H-1630 TO H-1650

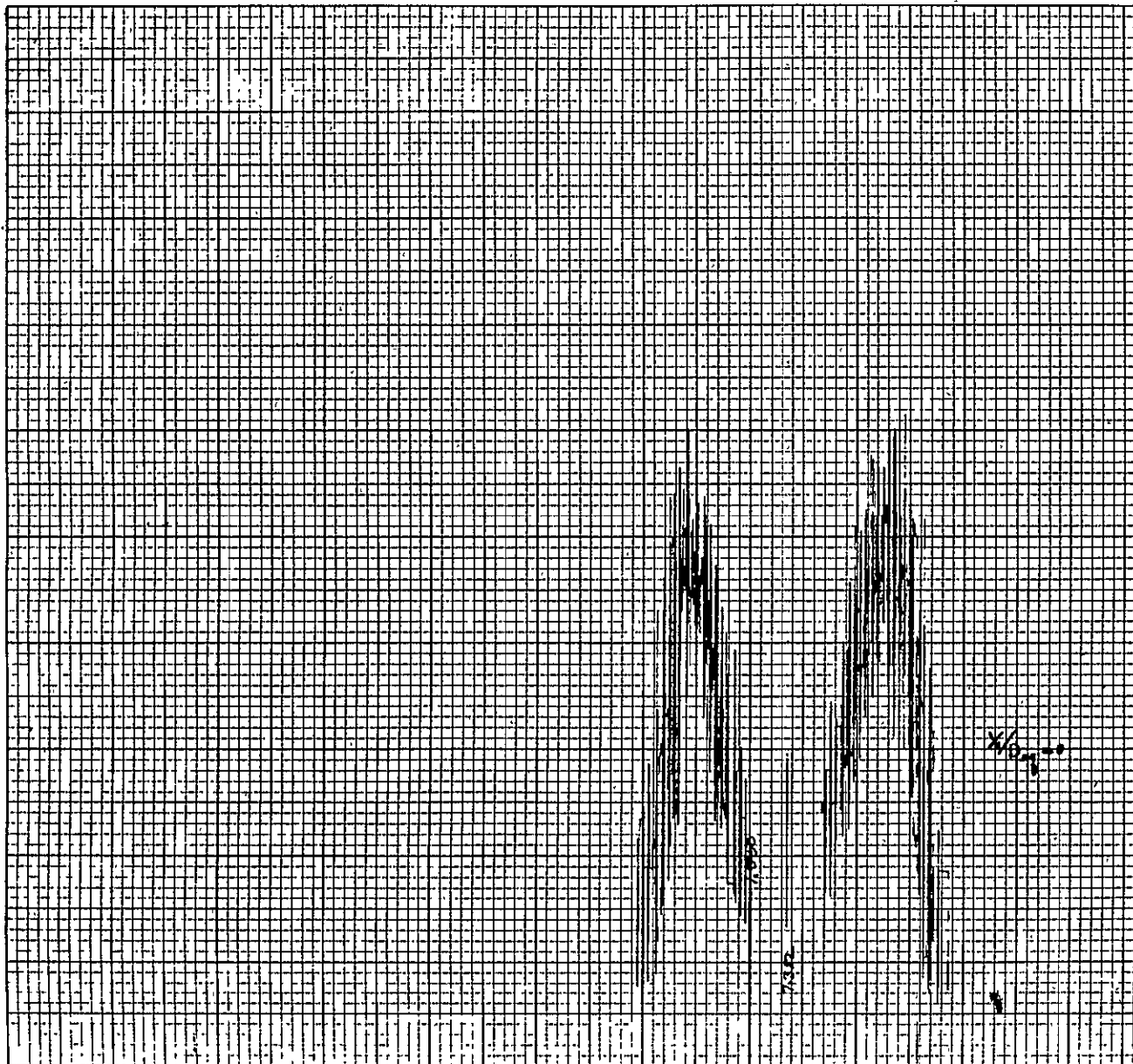




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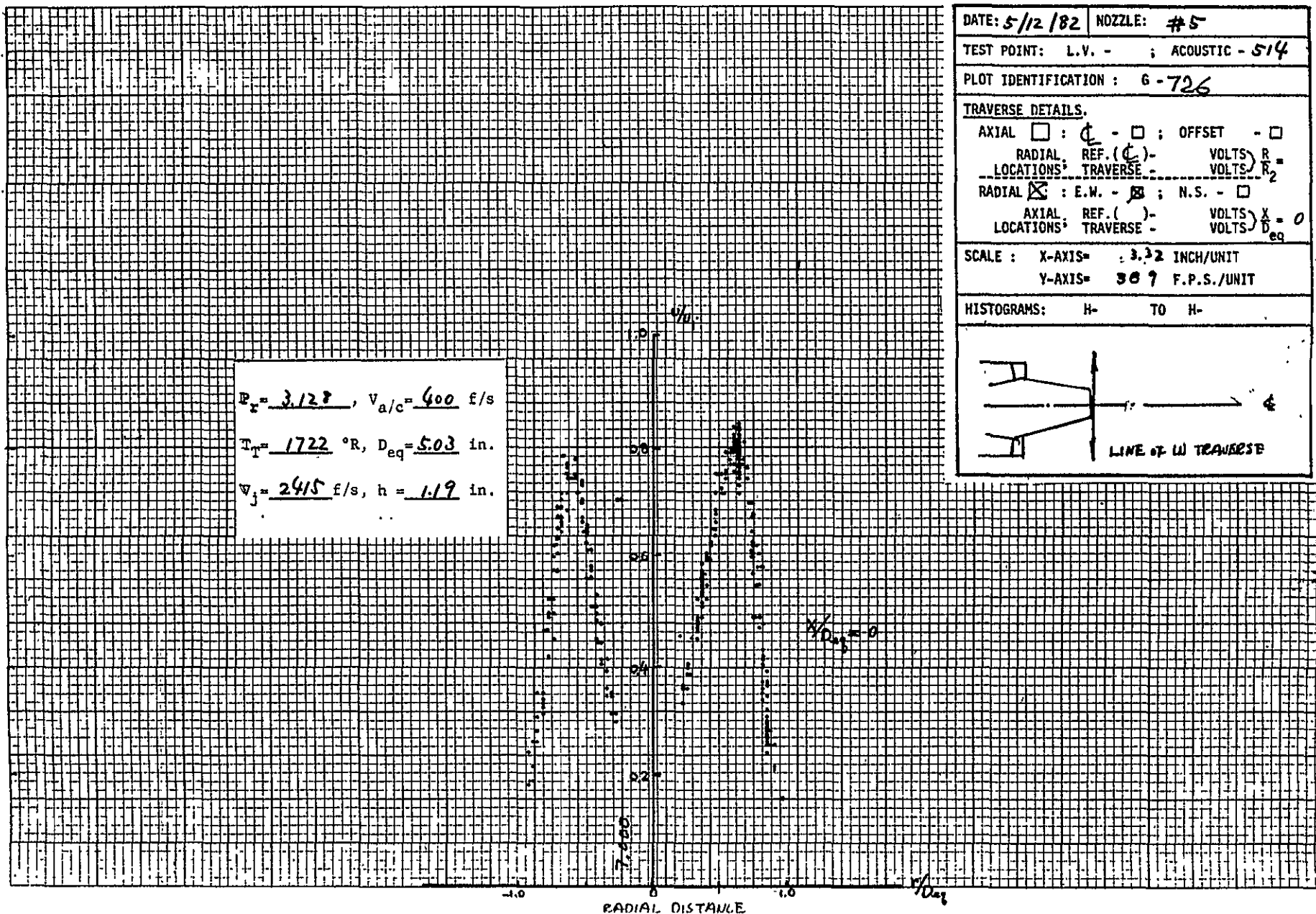
1211
GRAPHIC CHARTS CORPORATION
BRIDGE PLAZA
BRIDGE PLAZA
BRIDGE PLAZA



DATE: 5/12/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION: G-725	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.3 INCH/UNIT	
Y-AXIS= 389 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1212

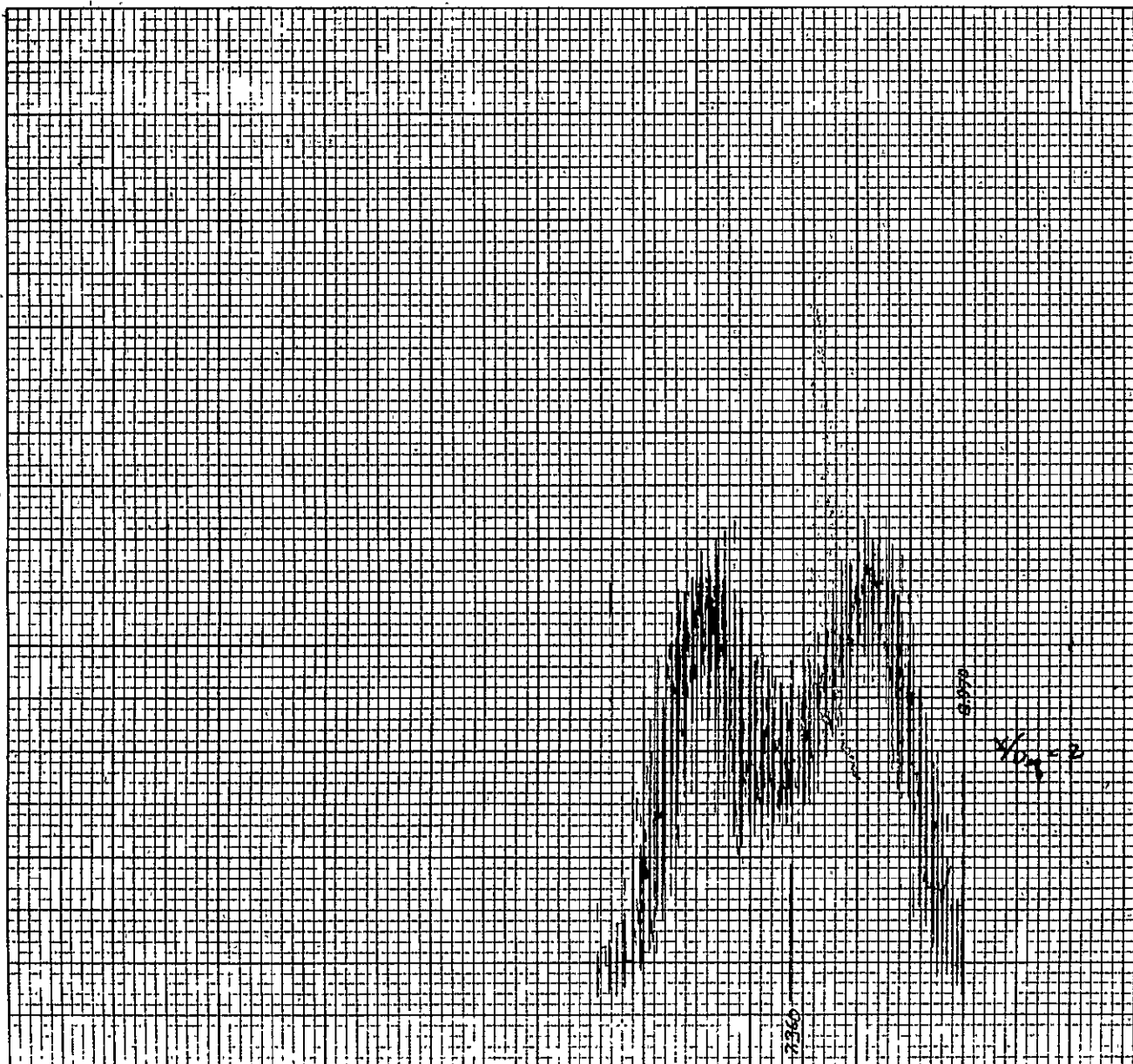


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1011 AX ON

1213

GRAPHIC CONTROLS CORPORATION
10000 WILSON AVENUE
ANN ARBOR, MICHIGAN 48106

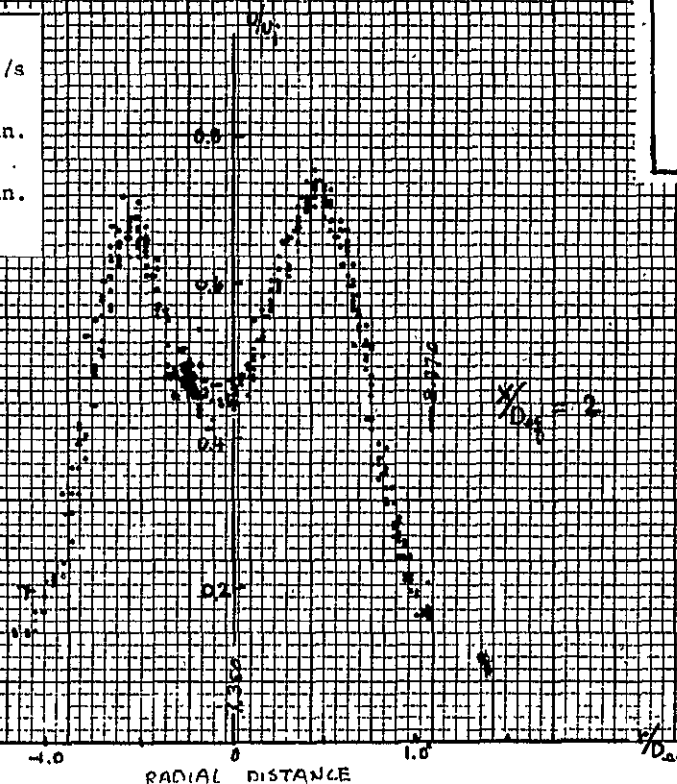


DATE: 5/12/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION : G - 727	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X = 2$
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= .23 INCH/UNIT	
Y-AXIS= 389 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$$P_r = 3.128, v_{a/c} = 400 \text{ f/s}$$

$$T_T = 1722^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2415 \text{ f/s}, h = 1.19 \text{ in.}$$



DATE: 5/12/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-728

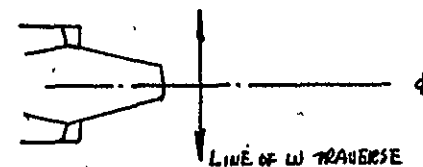
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R LOCATIONS* TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X LOCATIONS* TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 2.3 INCH/UNIT

Y-AXIS = 389 F.P.S./UNIT

HISTOGRAMS: H- TO .H-



1.20

$$X/D_{\text{ref}} = 6$$

DATE: 5/12/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION: G-729

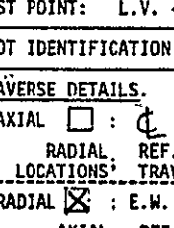
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL REF. () - VOLTS $X_D = 6$
LOCATIONS: TRAVERSE - VOLTS D_{eq}

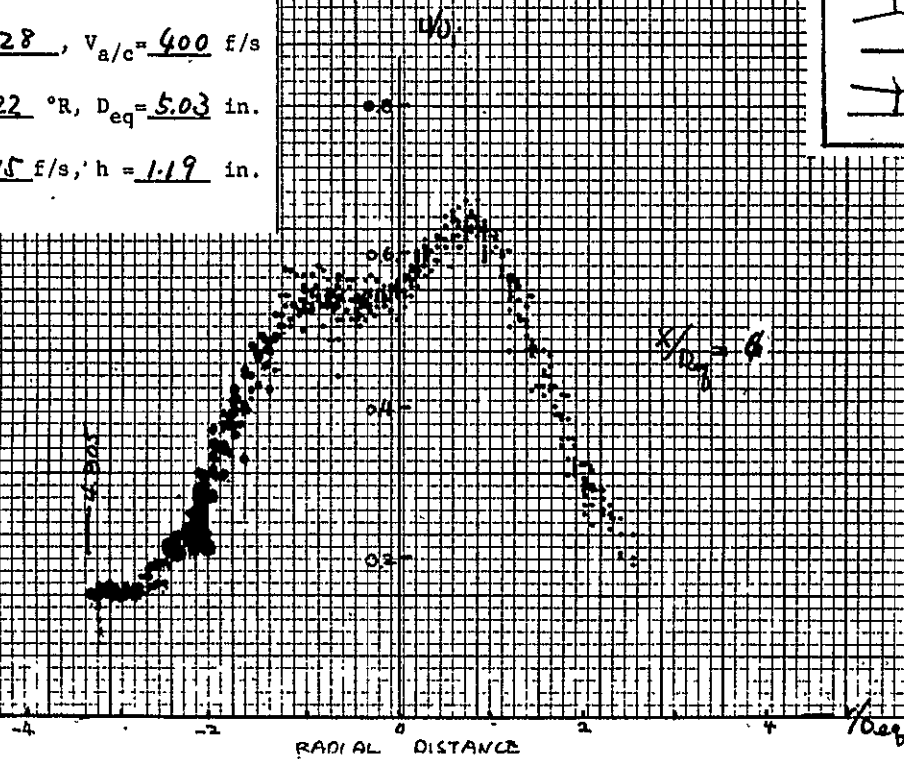
SCALE : X-AXIS= 3.3 INCH/UNIT
Y-AXIS= 301 F.P.S./UNIT

HISTOGRAMS: H- TO H-


The diagram shows a cross-section of a nozzle on the left, with a horizontal line extending from its tip to the right. A vertical line with arrows at both ends intersects the horizontal line. At the right end of the horizontal line, there is a small circle with a dot in the center. Below the diagram, the text 'LINE OF LV TRAVERSE' is written.

LINE OF LV TRAVERSE

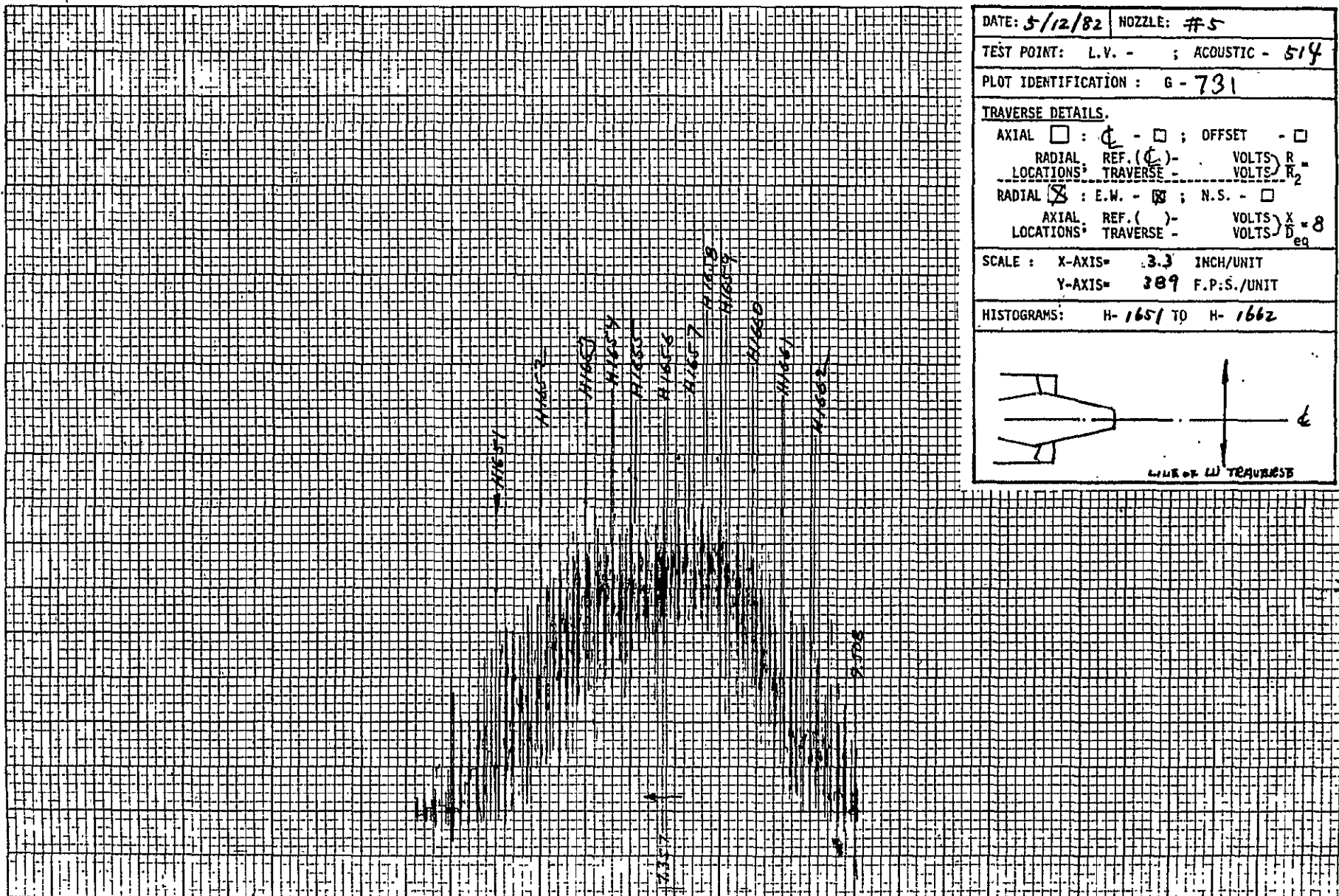
$P_T = 3.128$, $V_{a/c} = 400$ f/s
 $T_T = 1722$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2415$ f/s, $h = 1.19$ in.



DATE: 5/12/82	NOZZLE: #5
TEST POINT: L.V. -	ACOUSTIC - 514
PLOT IDENTIFICATION: G-730	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS* TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS* TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 389 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1217

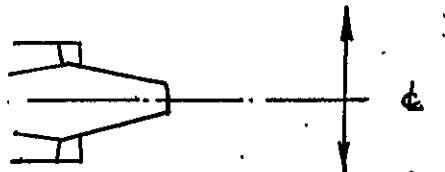
RECORDING CHARTS
GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK



NO. XYX

1218

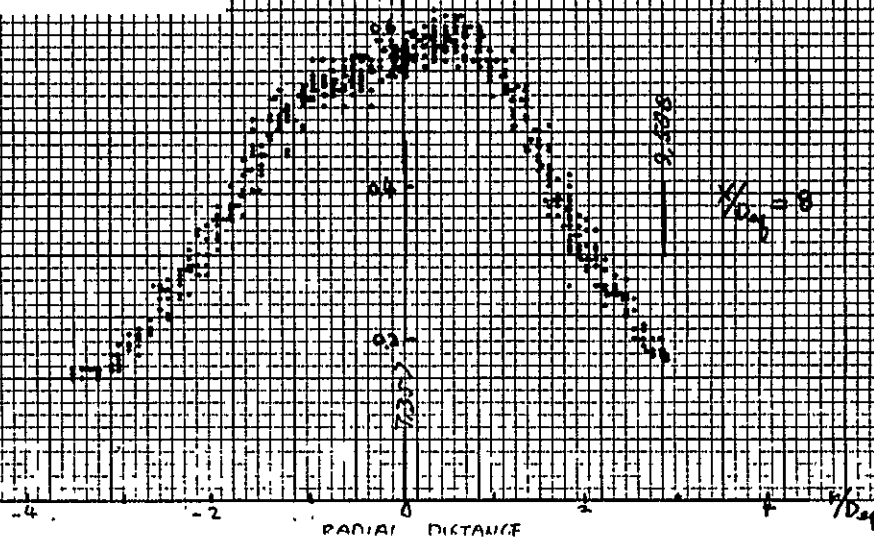
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
UNITED STATES OF AMERICA

DATE: 5/12/82	NOZZLE: #5
TEST POINT: L.V. - ; ACOUSTIC - 514	
PLOT IDENTIFICATION: G-732	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	$D_{eq} = 8$
SCALE : X-AXIS = 3.3 INCH/UNIT	
Y-AXIS = 389 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
 <p>LINE OF TRAVERSE</p>	

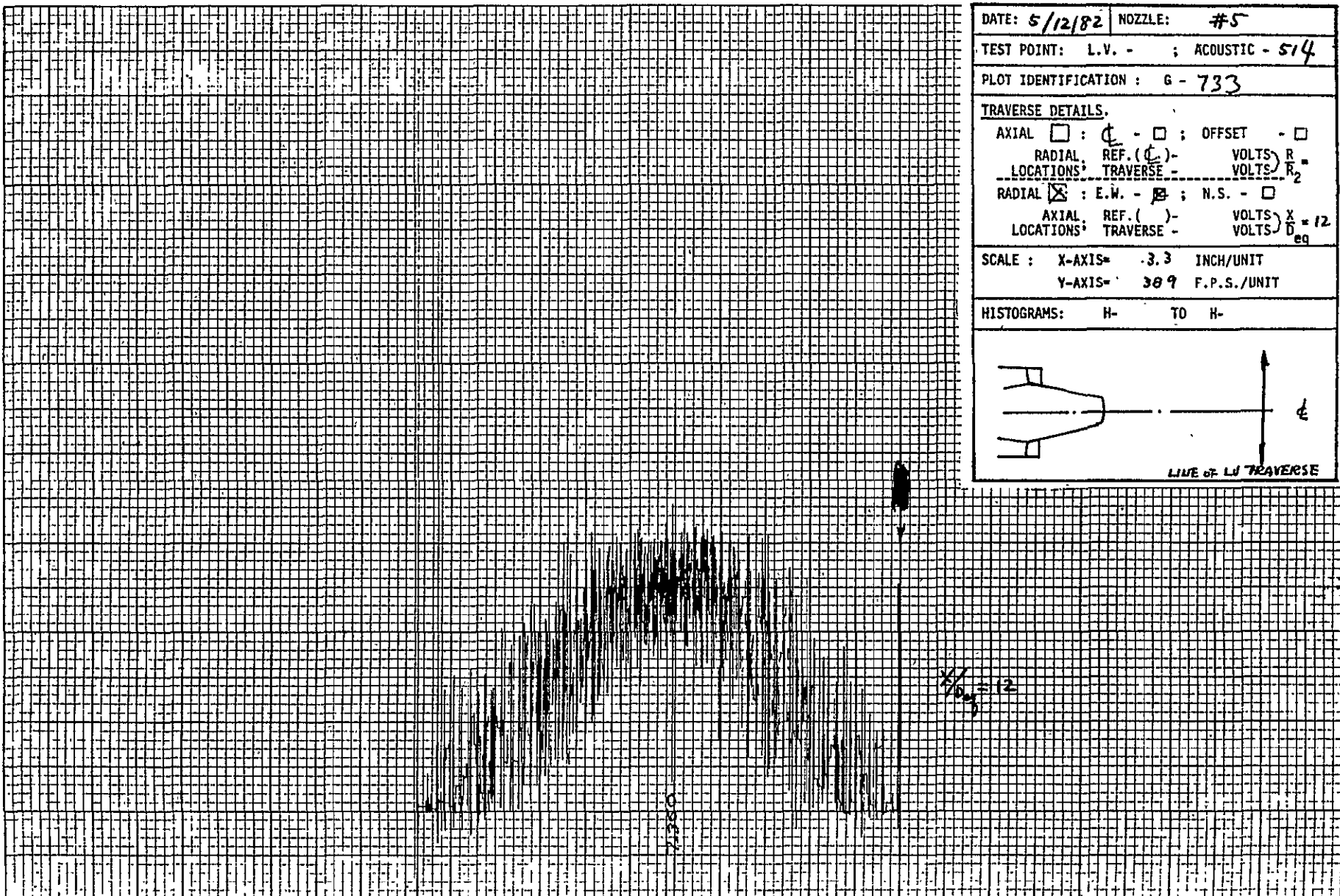
$P_r = 3.128$, $V_{a/c} = 400$ f/s

$T_T = 1722$ °R, $D_{eq} = 5.03$ in.

$V_j = 2415$ f/s, $h = 1.19$ in.



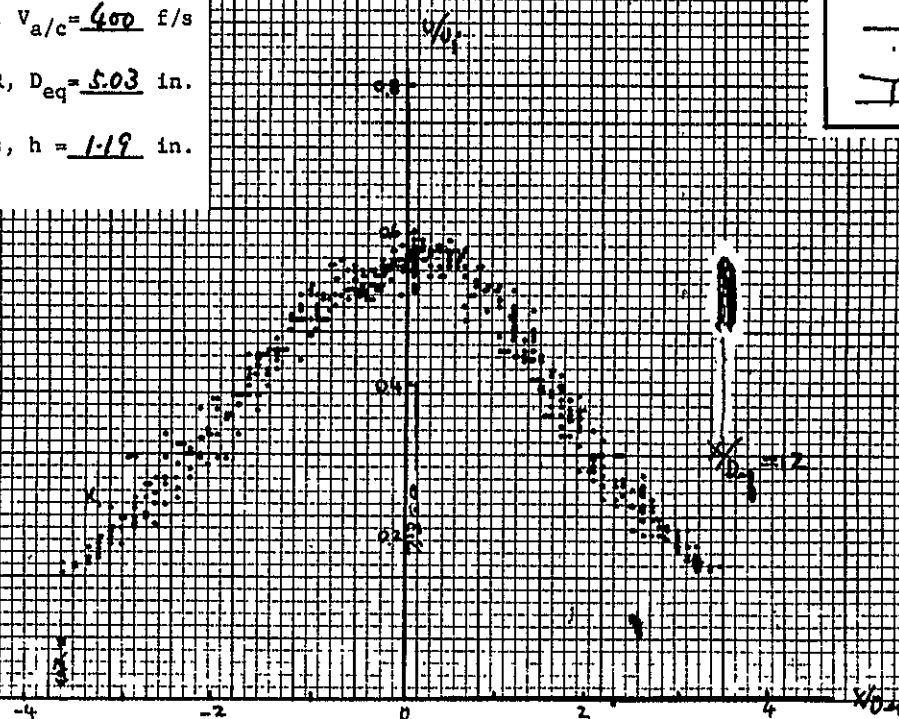
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$P_r = 3.128$, $V_{a/c} = 400$ f/s

$$T_T = \underline{1722} \text{ } ^\circ\text{R}, D_{eq} = \underline{5.03} \text{ in.}$$

$V_1 = \underline{2415} \text{ f/s}, h = \underline{1.19} \text{ in.}$



DATE: 5/12/82 NOZZLE: #5

TEST POINT: L.V. - ; ACOUSTIC - 514

PLOT IDENTIFICATION : G - 734

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (C) VOLTS } R
LOCATIONS; TRAVERSE - VOLTS } R₂

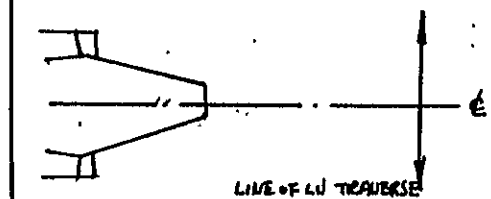
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS } $\times \frac{1}{D_{20}} = 12$
LOCATIONS: TRAVERSE - VOLTS }

SCALE : X-AXIS= 3.3 INCH/UNIT

Y-AXIS= 309 F.P.S./UNIT

HISTOGRAMS: H- TO H-

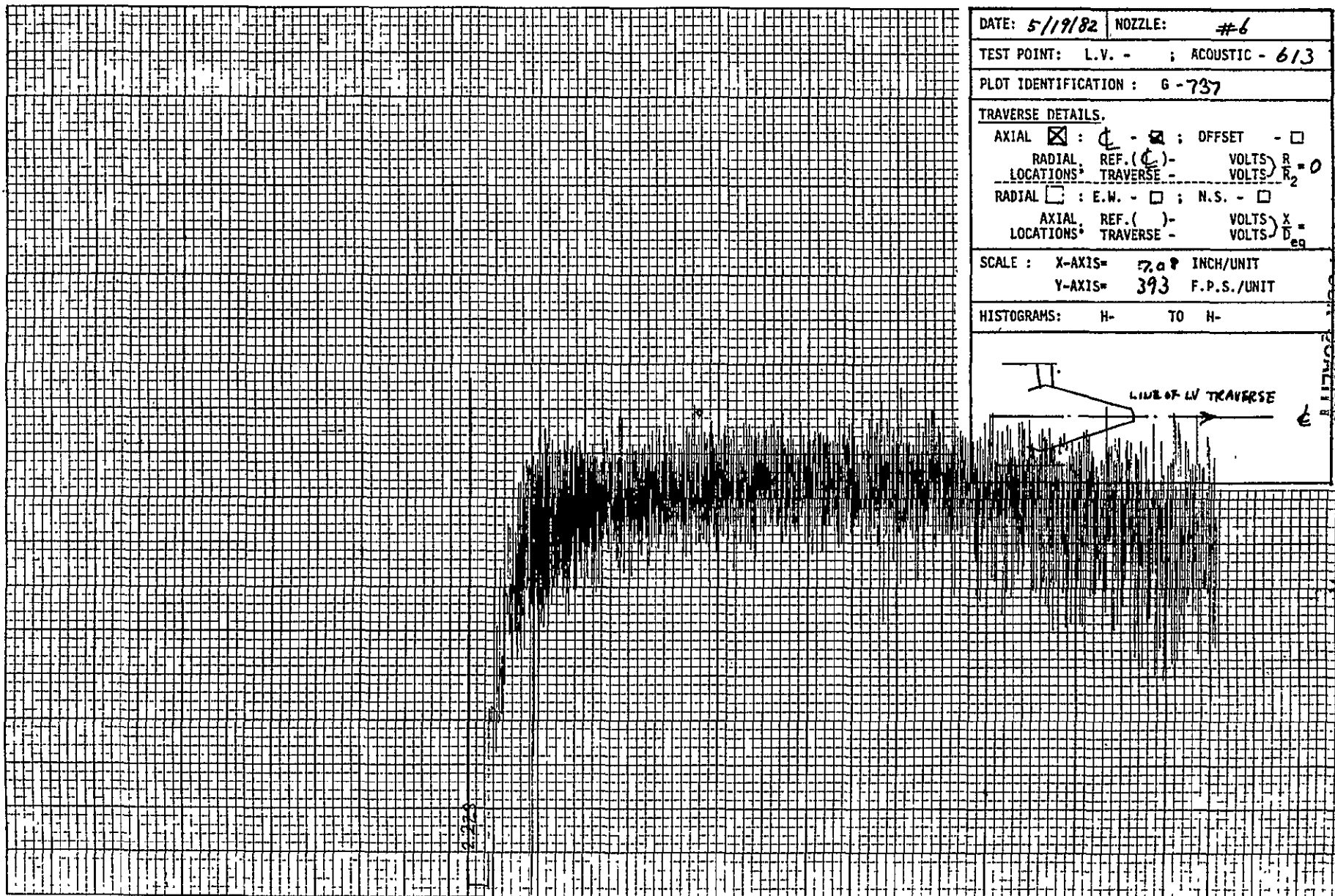


Model 6
Test Point 613

NO. XY 1101

1223

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DATE: 5/19/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-737

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ϕ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2} = 0$
LOCATIONS TRAVERSE - VOLTS

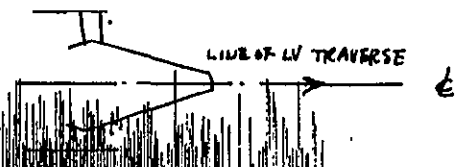
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE - VOLTS

SCALE : X-AXIS= 7.0 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



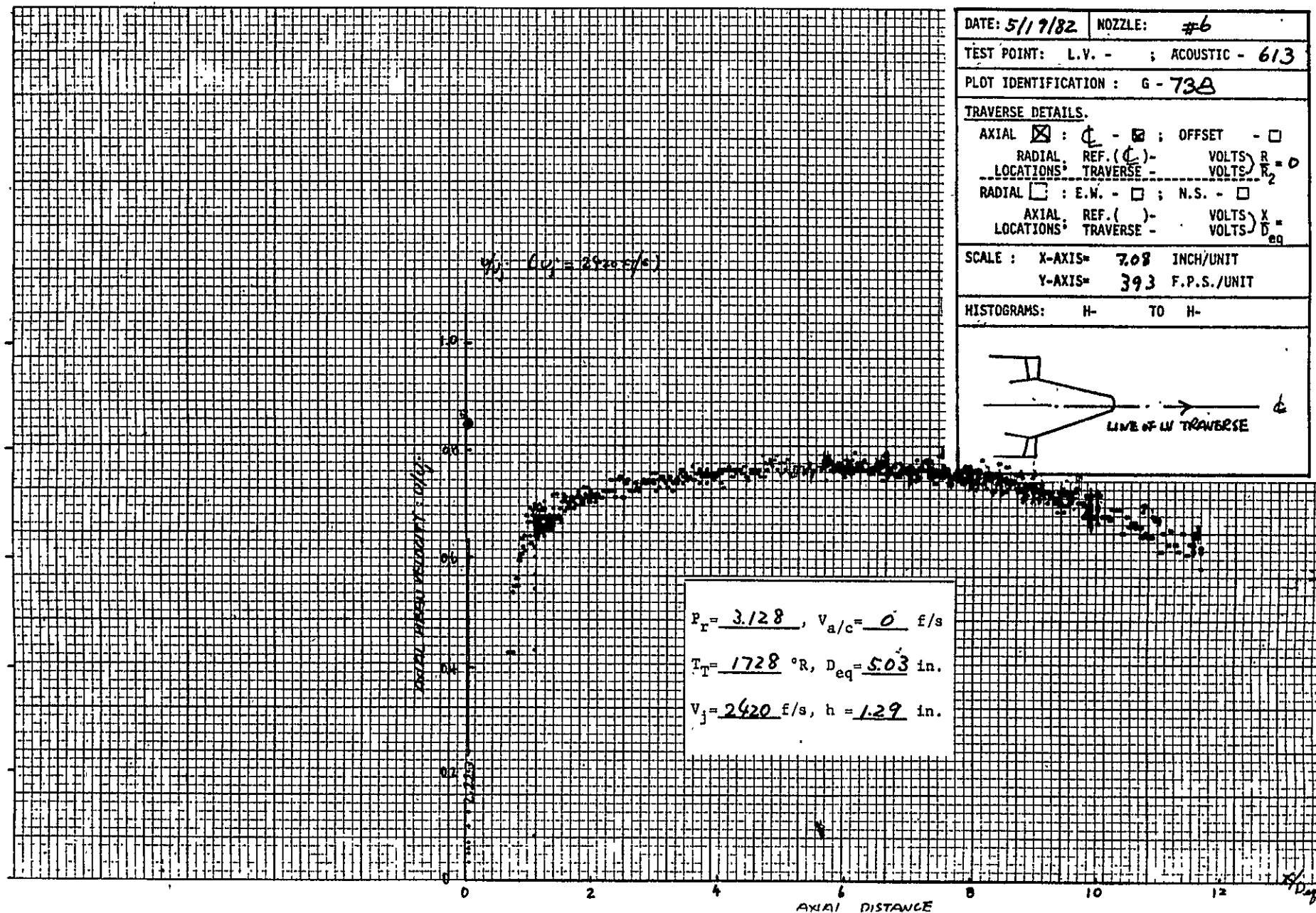
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DATE: 5/19/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G - 739

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - \square ; OFFSET - \square

RADIAL REF. (ϕ) - VOLTS R_1 =
LOCATIONS: TRAVERSE - VOLTS R_2 =

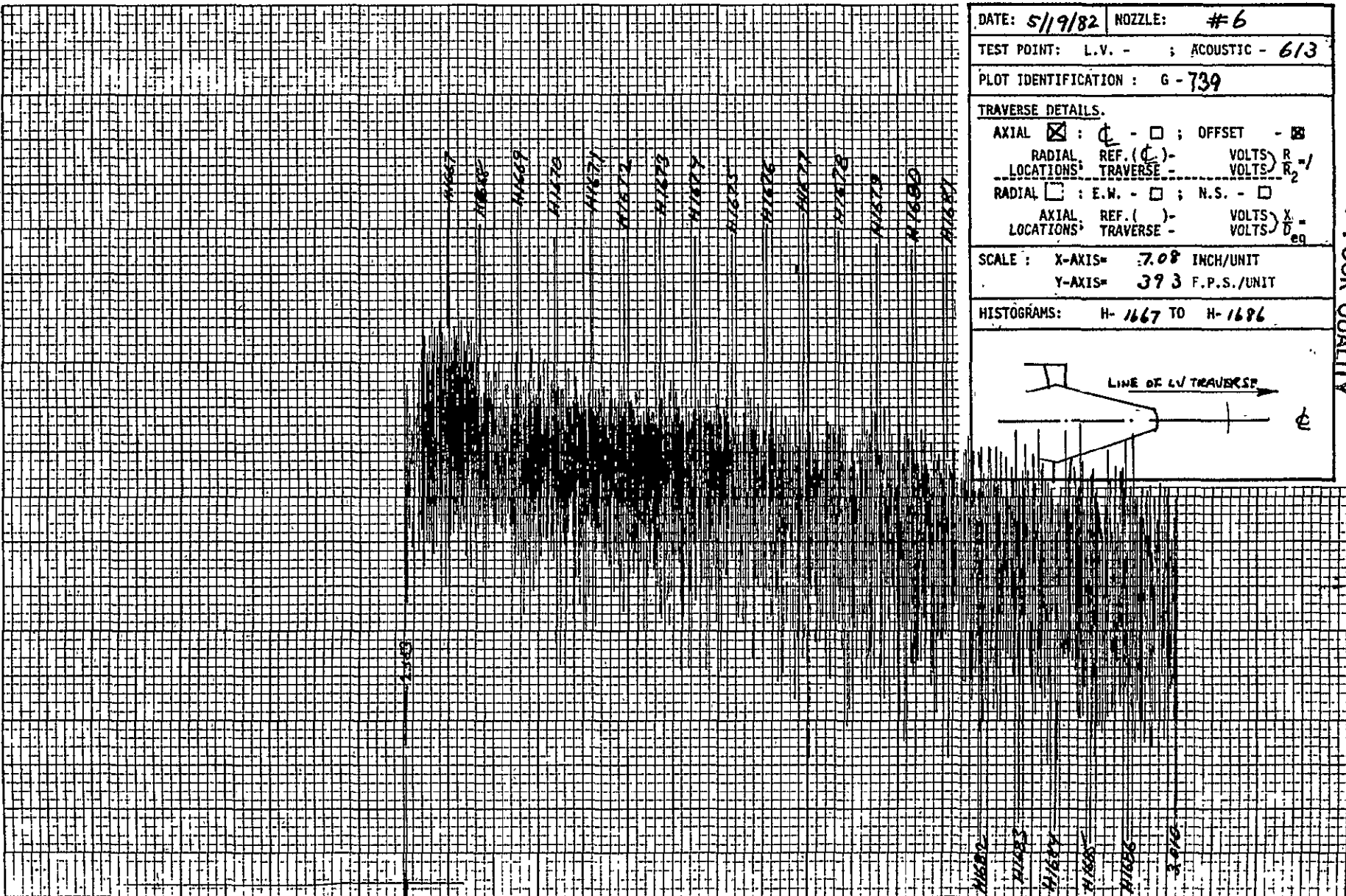
RADIAL ☐ : E.W. - \square ; N.S. - \square

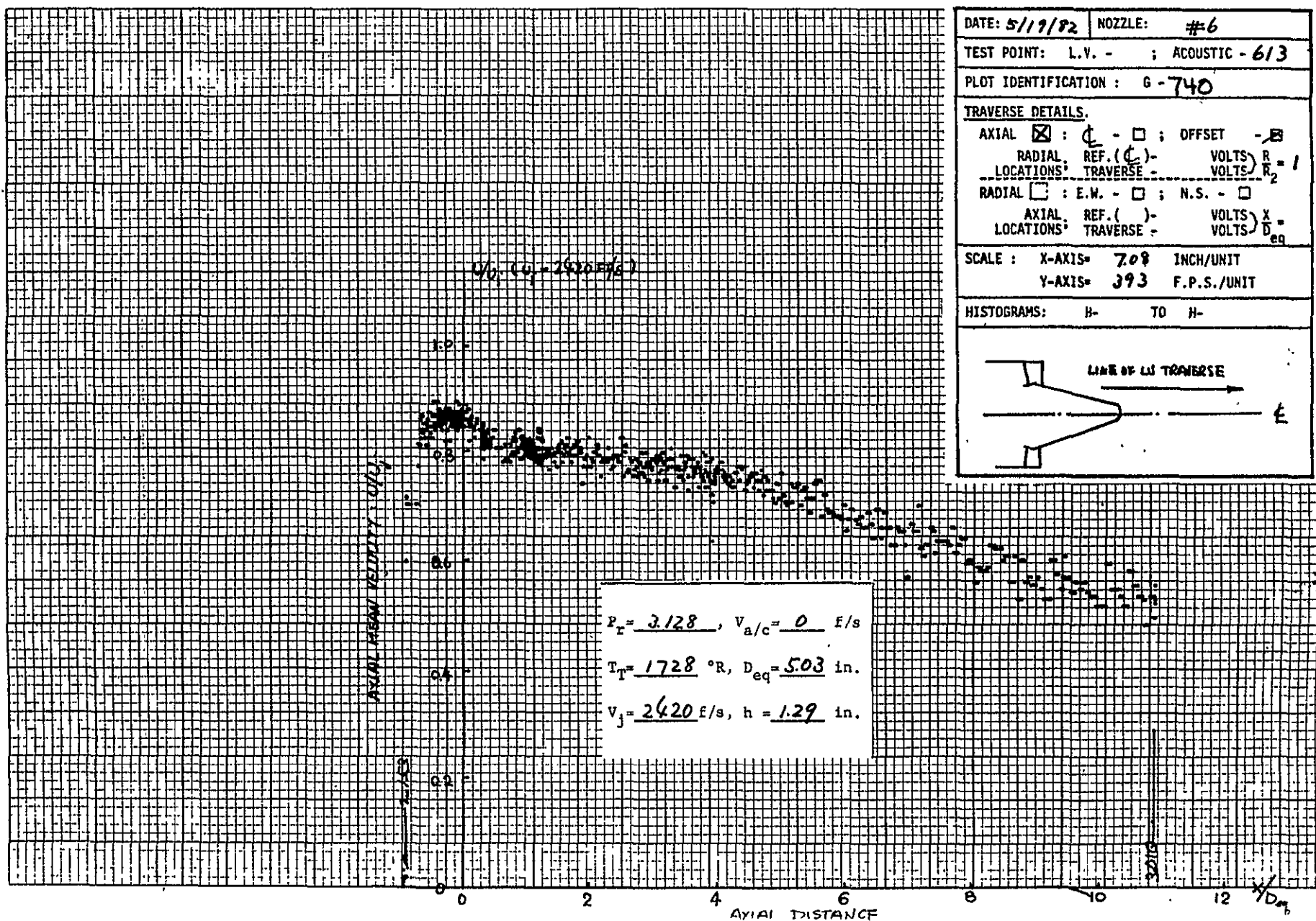
AXIAL REF. () - VOLTS X =
LOCATIONS: TRAVERSE - VOLTS D_{eq} =

SCALE: X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- 1667 TO H- 1686





NO. 1011 AX

1227

U.S. AIR FORCE
RESEARCH AND DEVELOPMENT
COMMITTEE
AERONAUTICAL DIVISION
WASHINGTON, D.C.



DATE: 5/19/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-741	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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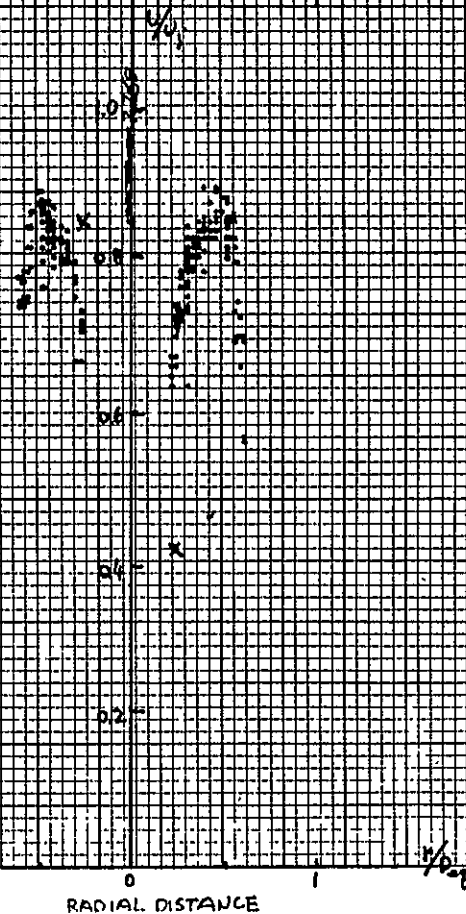
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$P_r = 3.128$, $V_{a/c} = 0$ f/s
 $T_T = 1728$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2420$ f/s, $h = 1.29$ in.



DATE: 5/19/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-742

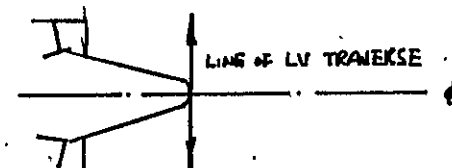
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
RADIAL REF. (C) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 393 F.P.S./UNIT

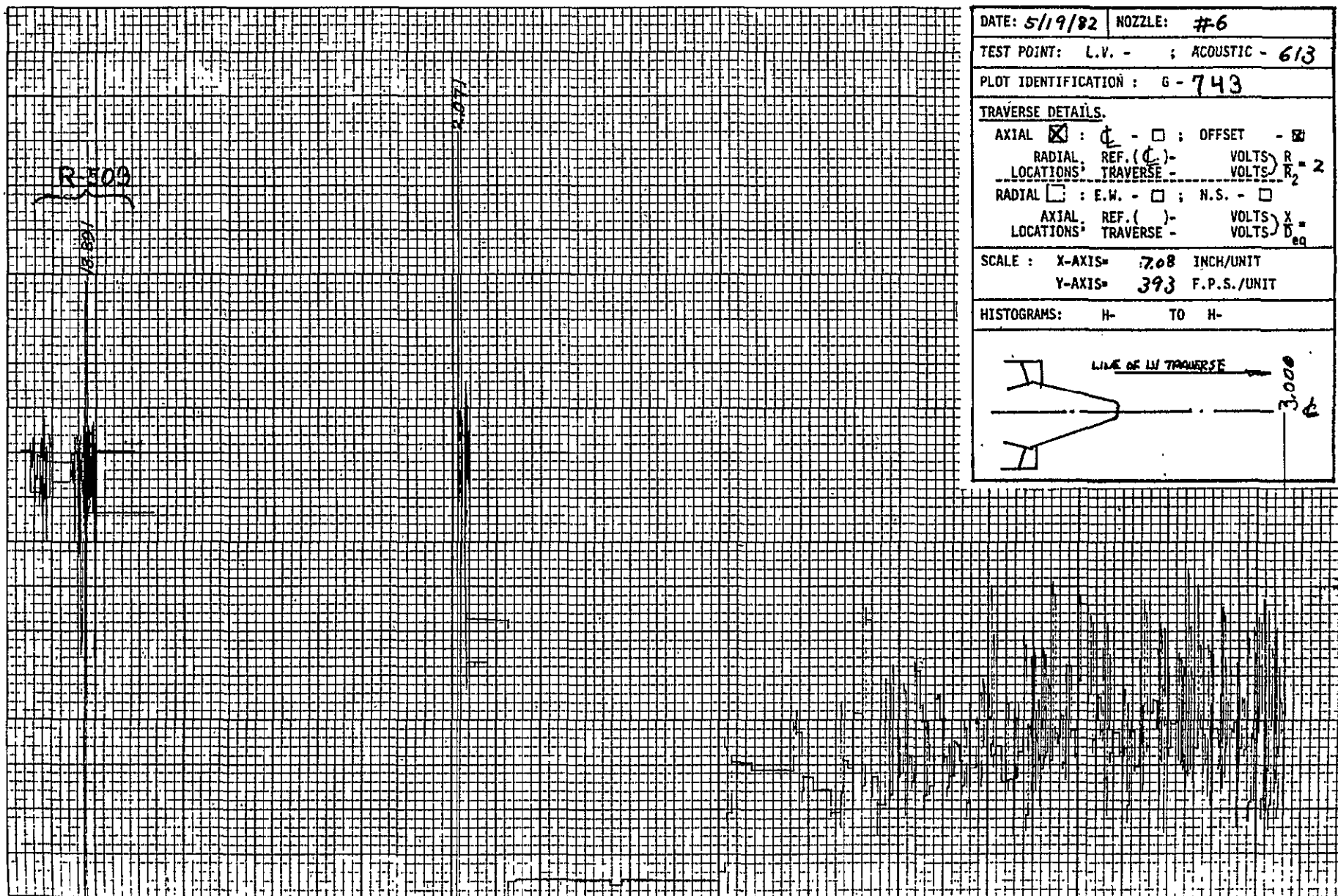
HISTOGRAMS: H- TO H-



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1229

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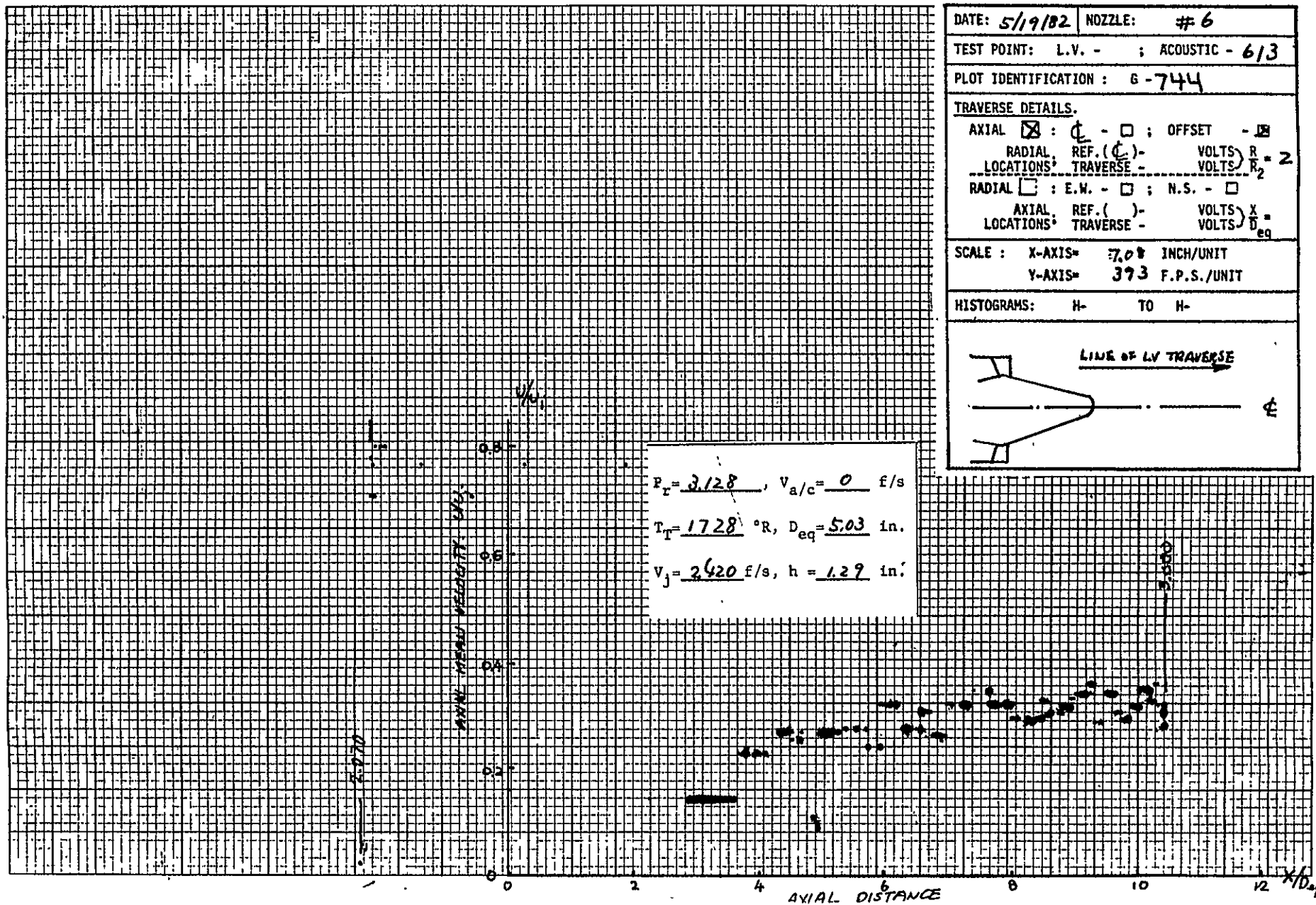
DATE: 5/19/82		NOZZLE: #6	
TEST POINT: L.V. -		ACOUSTIC - 613	
PLOT IDENTIFICATION: G - 743			
TRAVERSE DETAILS.			
AXIAL <input checked="" type="checkbox"/>	: ϕ - <input type="checkbox"/>	OFFSET	- <input type="checkbox"/>
RADIAL	REF. (ϕ) -	VOLTS R_1	$R_2 = 2$
LOCATIONS	TRAVERSE -	VOLTS R_2	
RADIAL <input type="checkbox"/>	: E.W. - <input type="checkbox"/>	N.S. - <input type="checkbox"/>	
AXIAL	REF. () -	VOLTS X	D_{eq}
LOCATIONS	TRAVERSE -	VOLTS D_{eq}	
SCALE: X-AXIS= 7.08 INCH/UNIT			
Y-AXIS= 393 F.P.S./UNIT			
HISTOGRAMS: H- TO H-			

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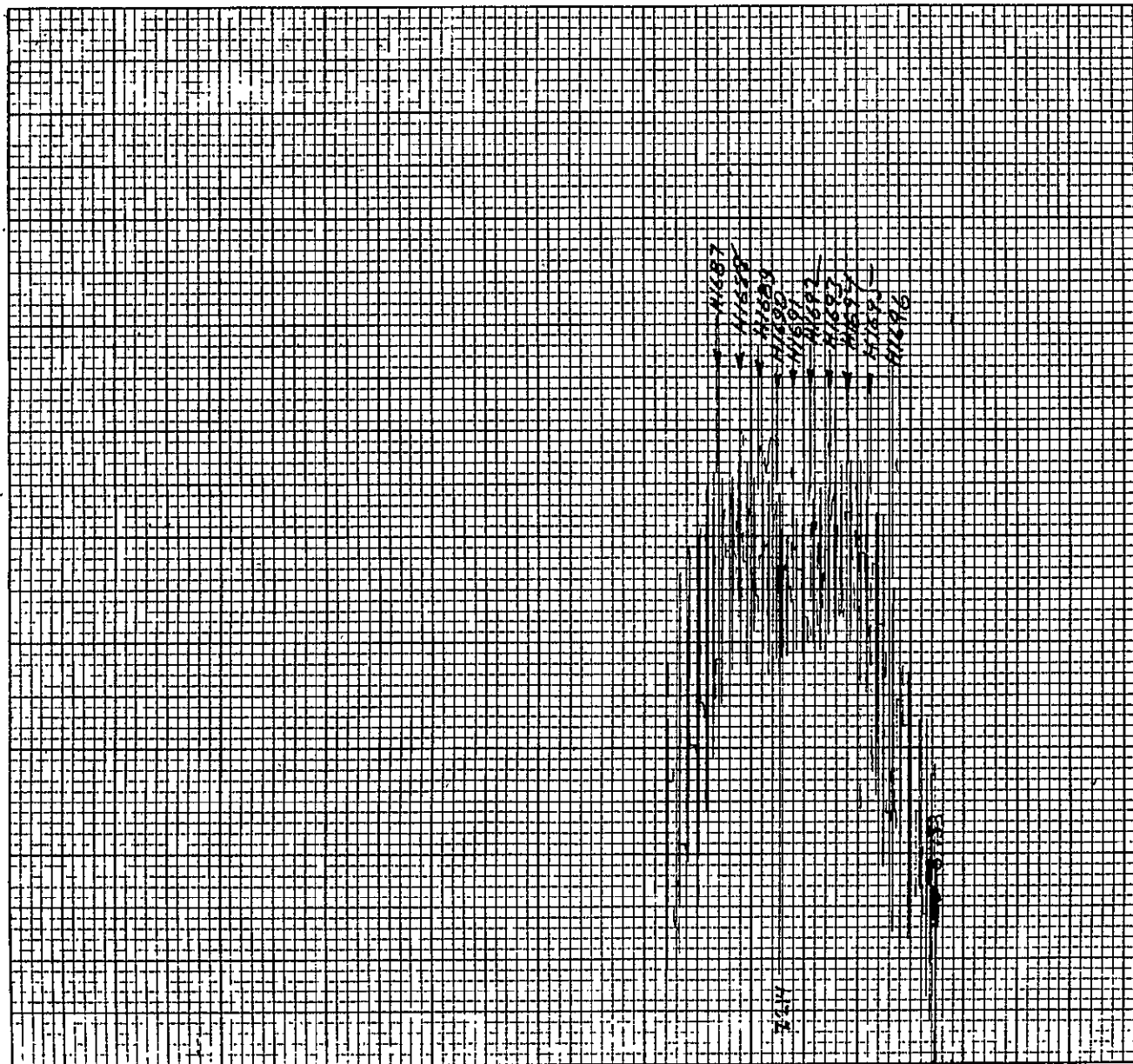
GRAPHIC CONTROLS CORPORATION
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DATE: 5/19/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-745	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H-1687 TO H-1696	
<p>LINE OF LI TRAVERSE</p>	

$$P_r = 3.128, v_{a/c} = 0 \text{ f/s}$$

$$T_r = 1728^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2420 \text{ f/s}, h = 1.29 \text{ in.}$$

RADIAL DISTANCE

DATE: 5/19/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-746

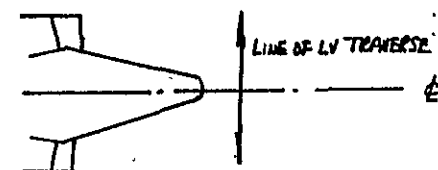
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS* TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS* TRAVERSE - VOLTS D_{eq} = 2

SCALE : X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 393 F.P.S./UNIT

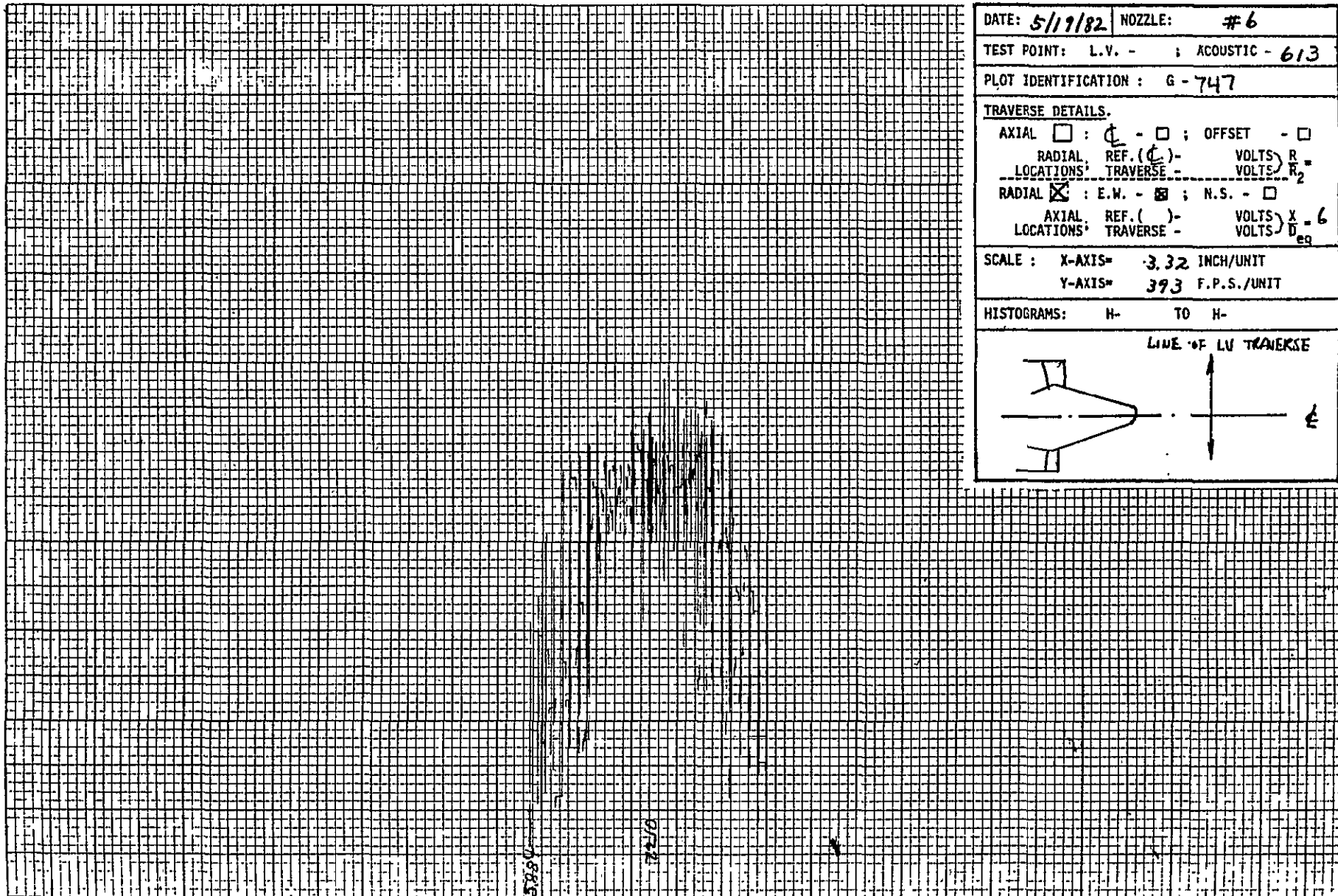
HISTOGRAMS: H- TO H-



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DATE: 5/19/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-747

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

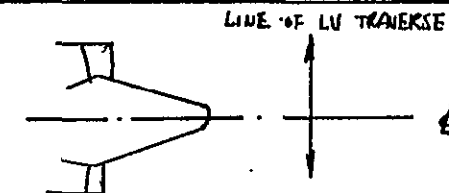
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq} -6

SCALE: X-AXIS= 3.32 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

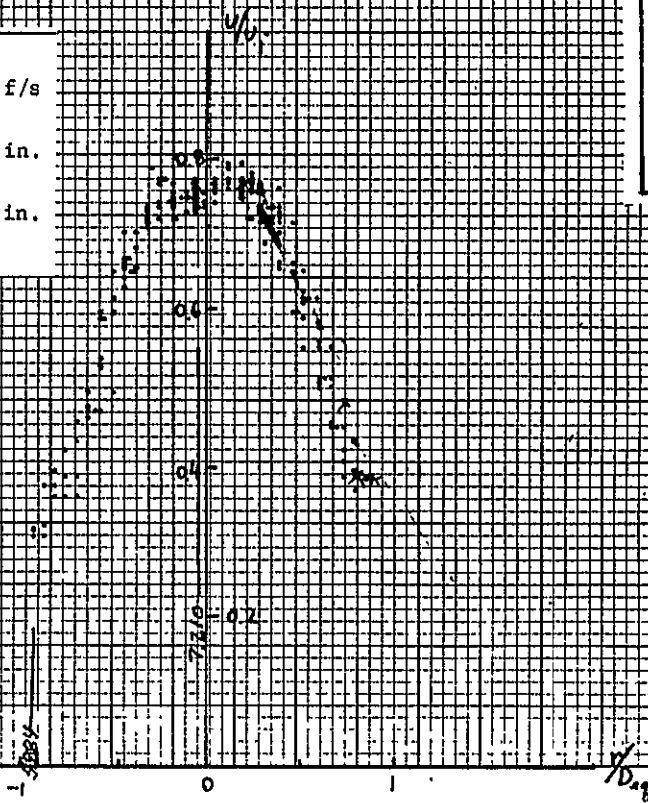
HISTOGRAMS: H- TO H-



$$P_T = \underline{3.128}, V_{a/c} = \underline{0} \text{ f/s}$$

$$T_T = \underline{1728}^\circ\text{R}, D_{eq} = \underline{5.03} \text{ in.}$$

$$V_j = \underline{2420} \text{ f/s}, h = \underline{1.29} \text{ in.}$$

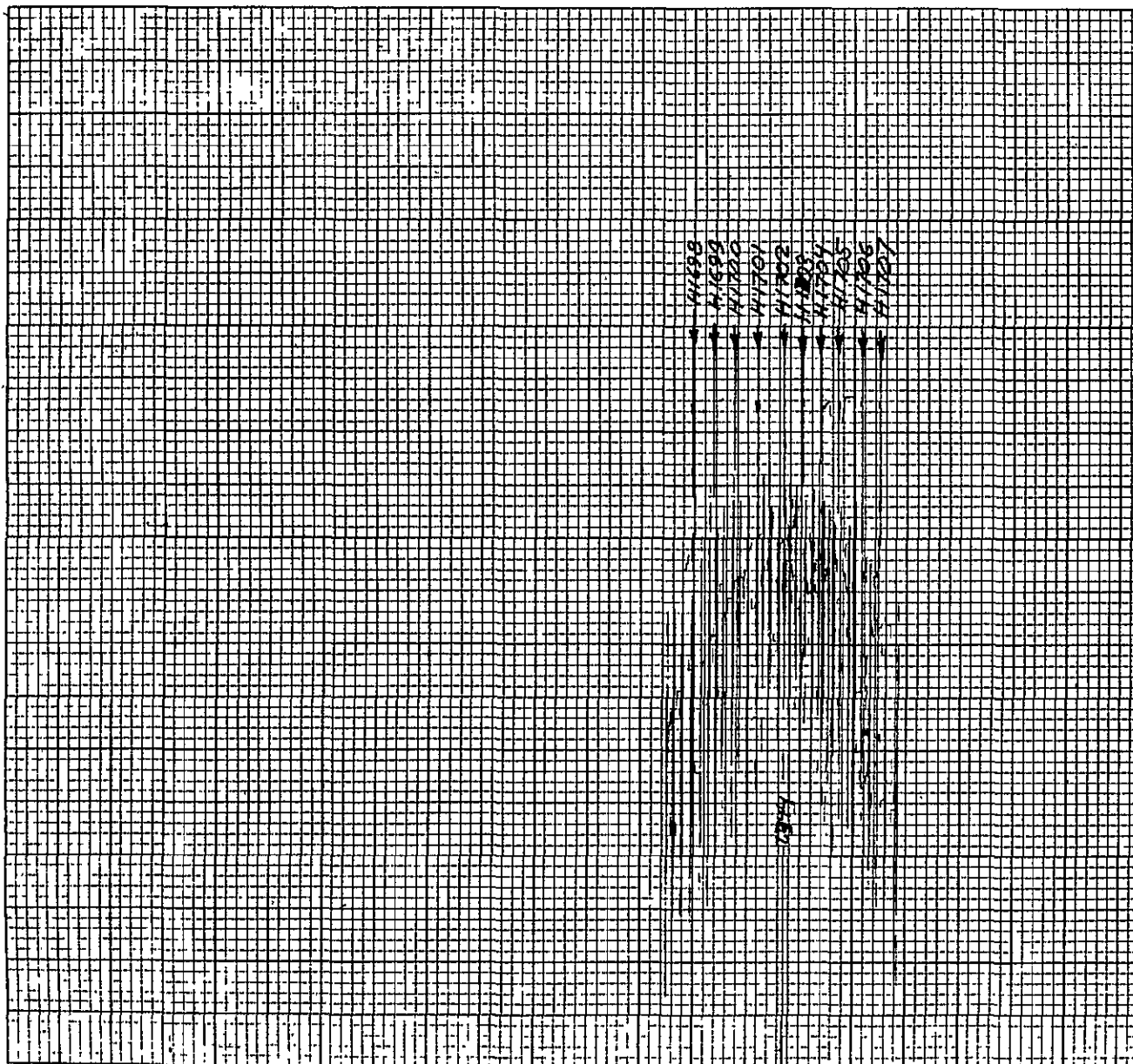


DATE: 5/19/82	NOZZLE: # 6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-748	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X = 6$
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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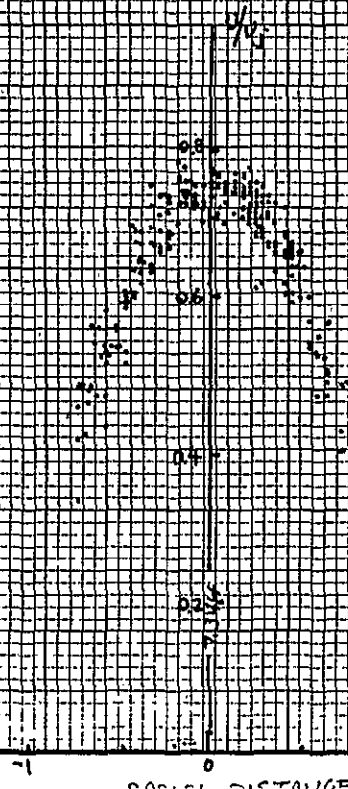


DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G - 749	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- 1687 TO H- 1707	

$P_r = 3.128$, $V_{a/c} = 0$ f/s

$$T_T = \underline{1728} \text{ } ^\circ R, D_{eq} = \underline{5.03} \text{ in.}$$

$$V_1 = \underline{2420} \text{ f/s}, h = \underline{1.29} \text{ in.}$$



DATE: 5/20/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G - 750

TRAVERSE DETAILS.

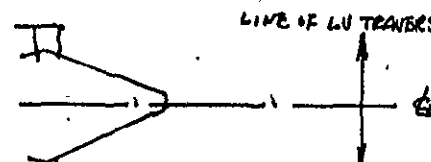
AXIAL ☐ : ☒ - ☐ ; OFFSET - ☐
RADIAL REF. (C) - VOLTS) R
LOCATIONS: TRAVERSE - VOLTS) R₂

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL REF. () - VOLTS) X
LOCATIONS: TRAVERSE - VOLTS) D_{eq} = 8

SCALE: X-AXIS= 3.32 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LIVE OF LV TRAVERSE

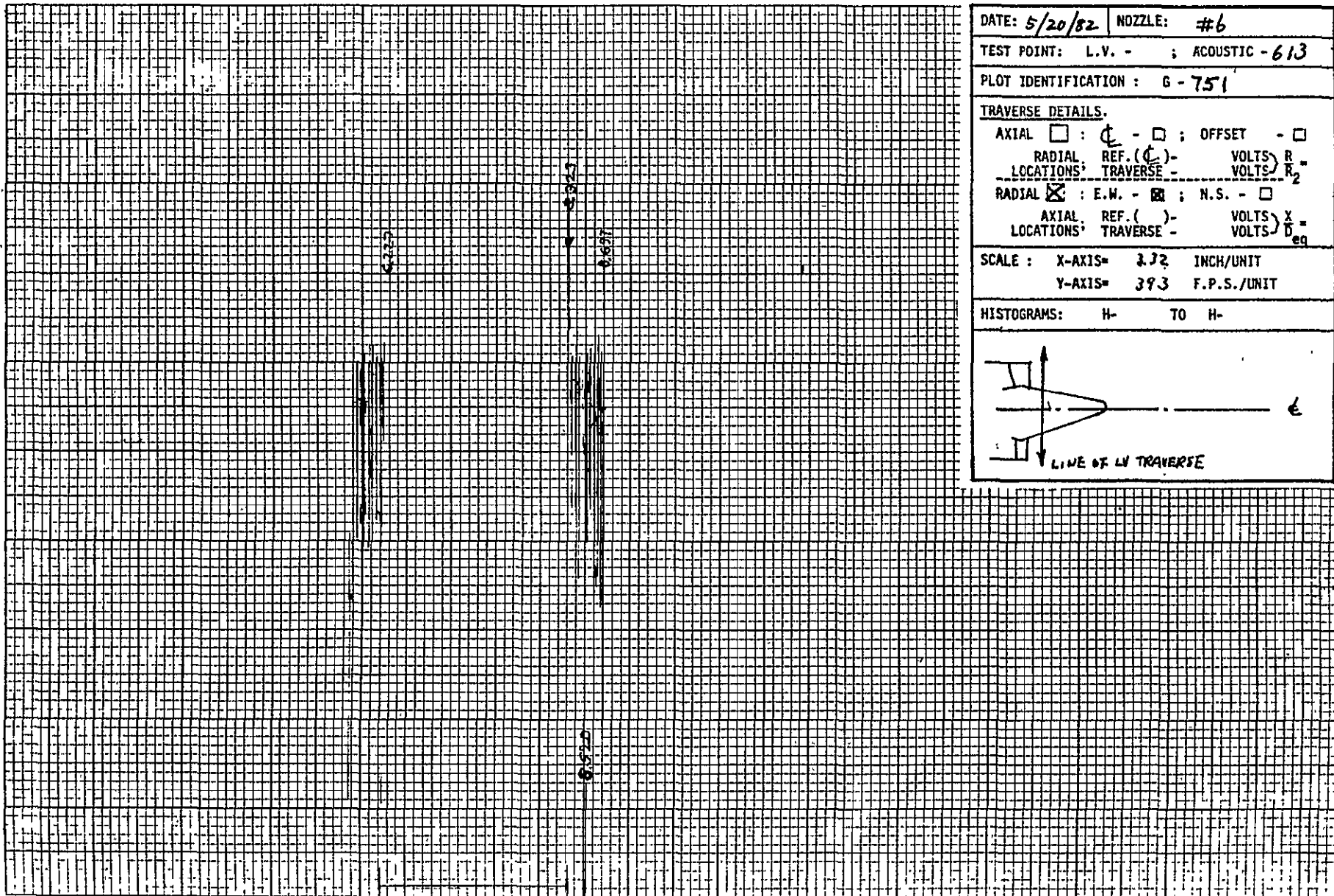


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DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G-751	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS' TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS' TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.72 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G - 752	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$$P_r = 3.128, V_{a/c} = 0 \text{ f/s}$$

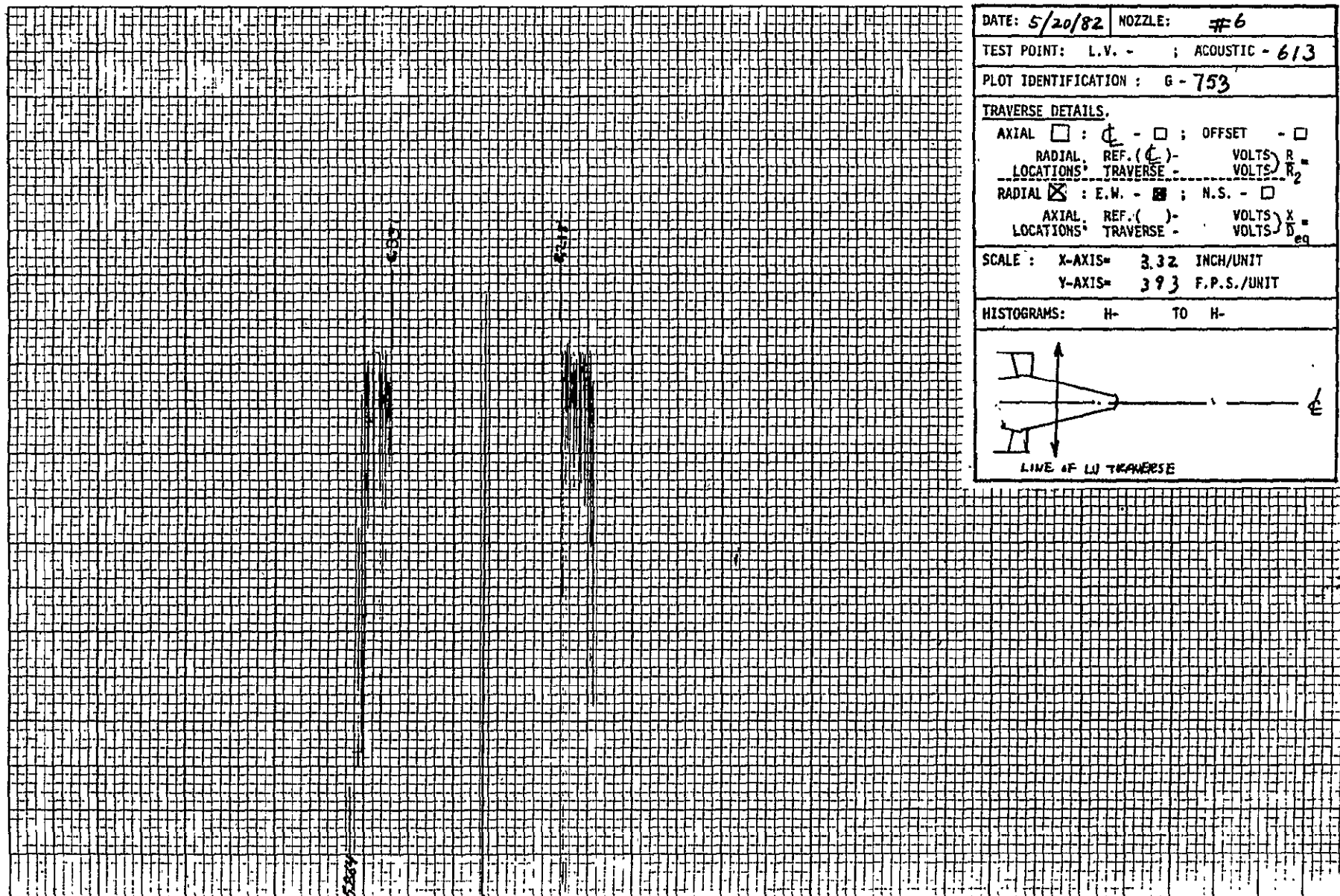
$$T_T = 1728^\circ R, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2420 \text{ f/s, } h = 1.29 \text{ in.}$$

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DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-753	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LI TRAVERSE</p>	

DATE: 5/20/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-754

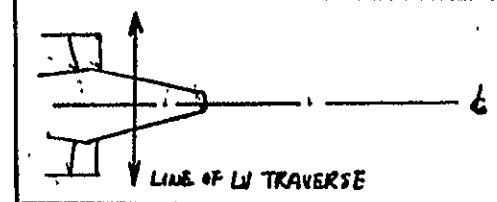
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

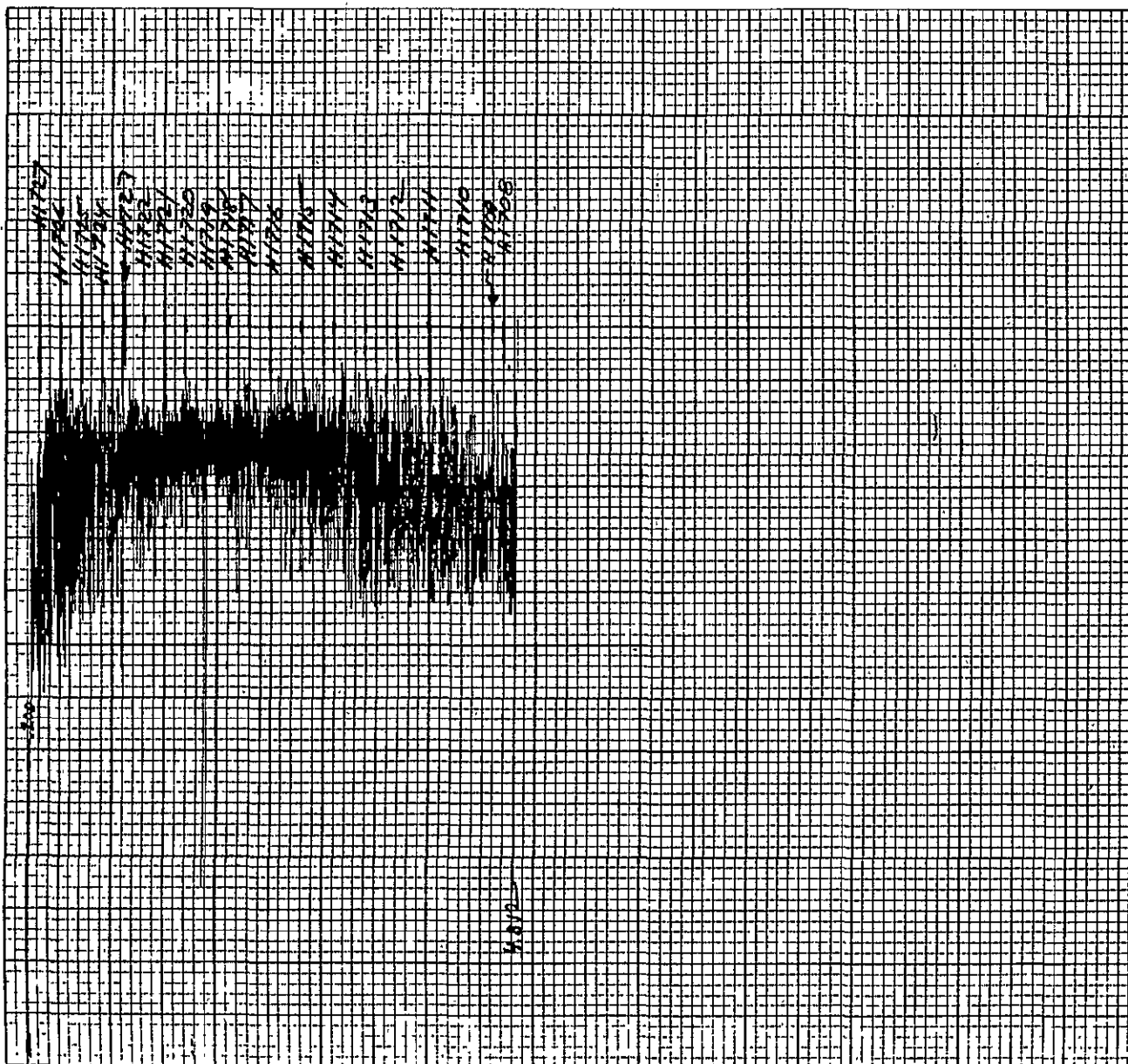
SCALE: X-AXIS= 3.32 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

 $P_r = 3.128$, $v_{a/c} = 0$ f/s $T_1 = 1728$ °R, $D_{eq} = 5.03$ in. $v_j = 2420$ f/s, $h = 1.29$ in.

1/0.28



DATE: 5/20/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G - 755

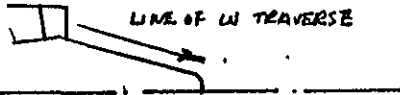
TRAVERSE DETAILS.

AXIAL	<input checked="" type="checkbox"/>	:	ϕ	-	<input type="checkbox"/>	; OFFSET	-	<input type="checkbox"/>
RADIAL		REF.	(ϕ)	-		VOLTS	)	R
LOCATIONS		TRAVERSE	-			VOLTS	)	R ₂
<hr/>								
RADIAL	<input type="checkbox"/>	:	E.W.	-	<input type="checkbox"/>	; N.S.	-	<input type="checkbox"/>
AXIAL		REF.	()	-		VOLTS	)	X
LOCATIONS		TRAVERSE	-			VOLTS)	D _{eq}

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-1708 TO H-1727

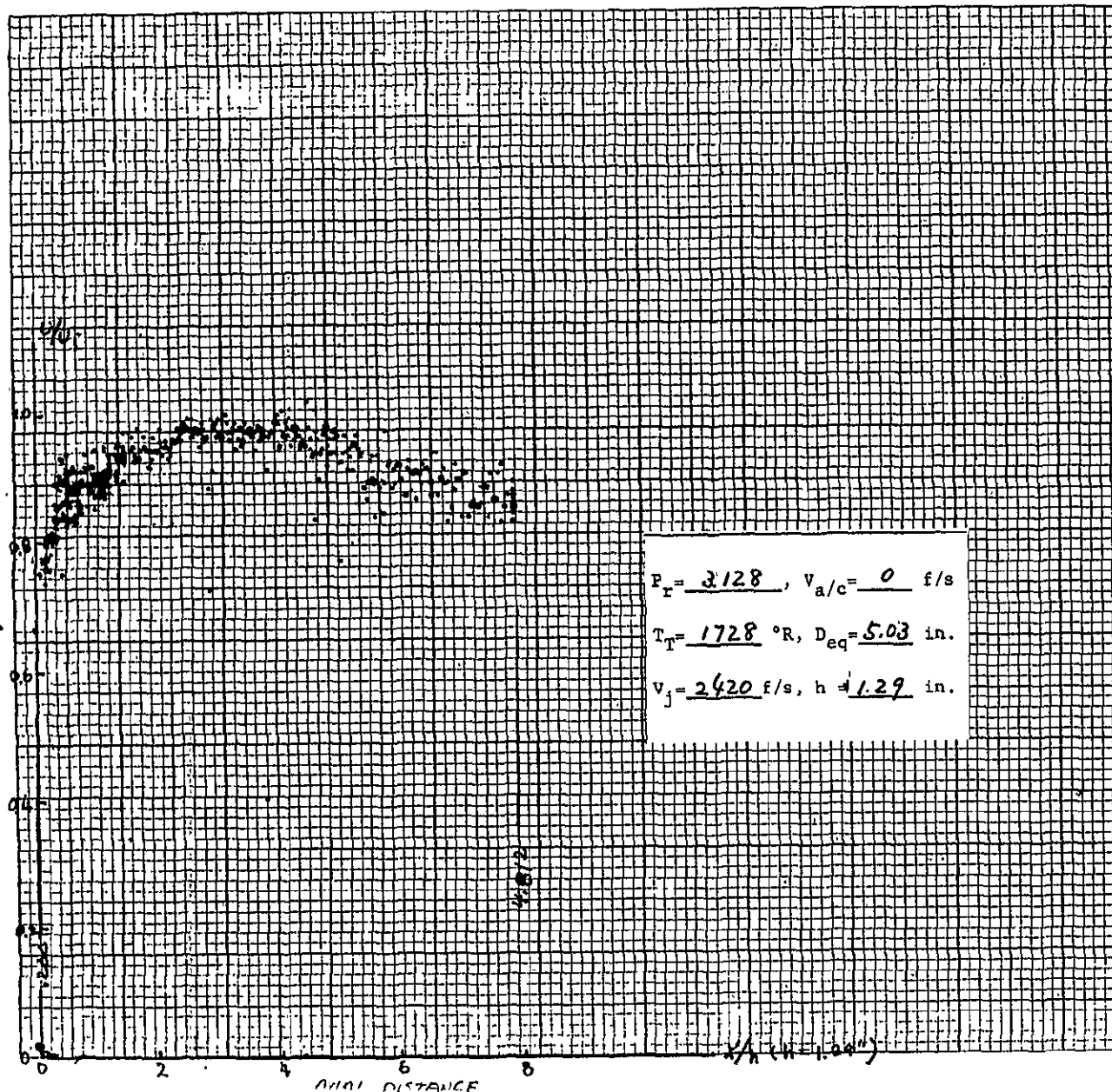


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$P_r = 3.128$, $V_{a/c} = 0$ f/s
 $T_r = 1728$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2420$ f/s, $h = 1.29$ in.

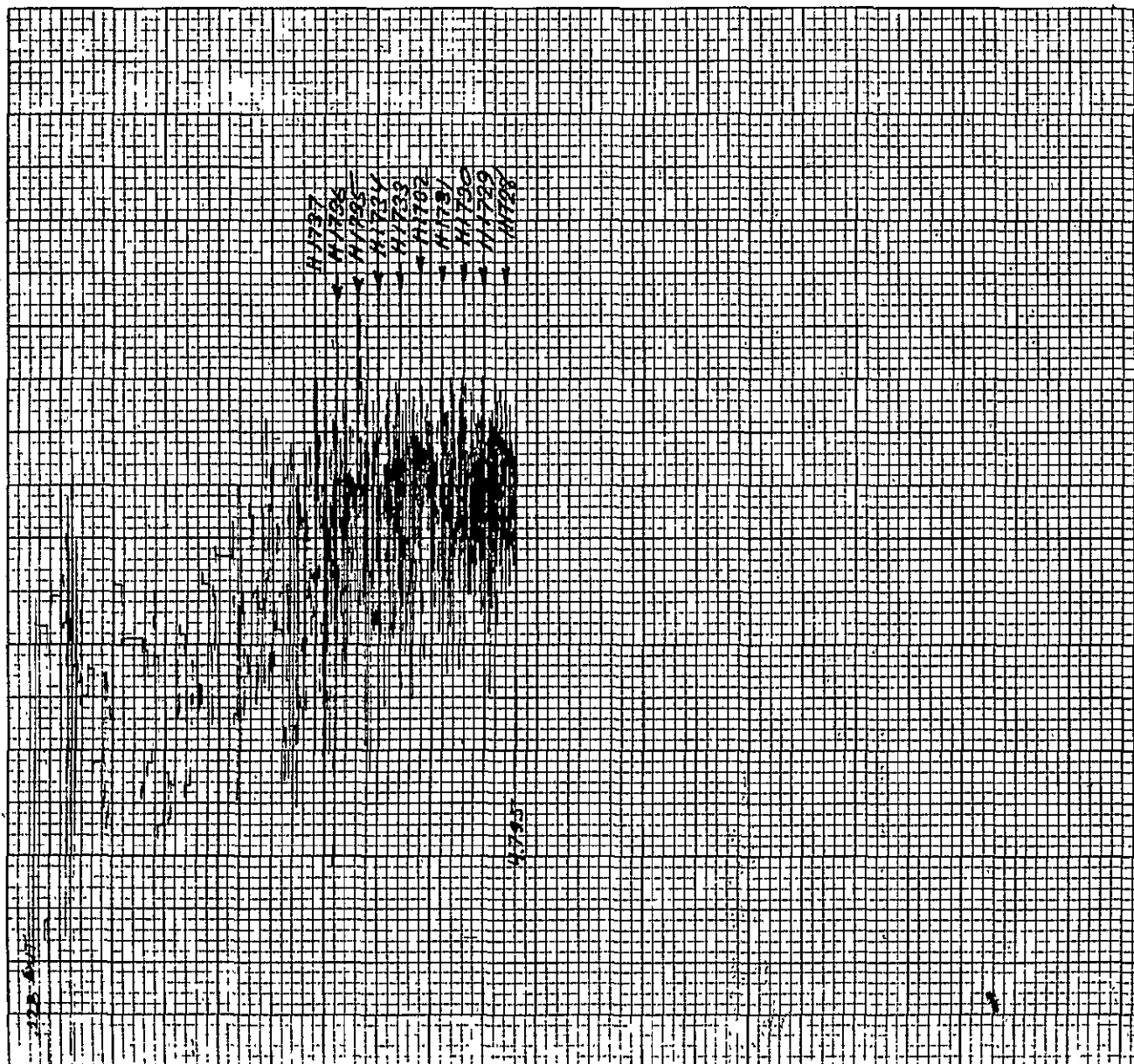
DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G-756	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-757	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H-1737 TO H-1728	

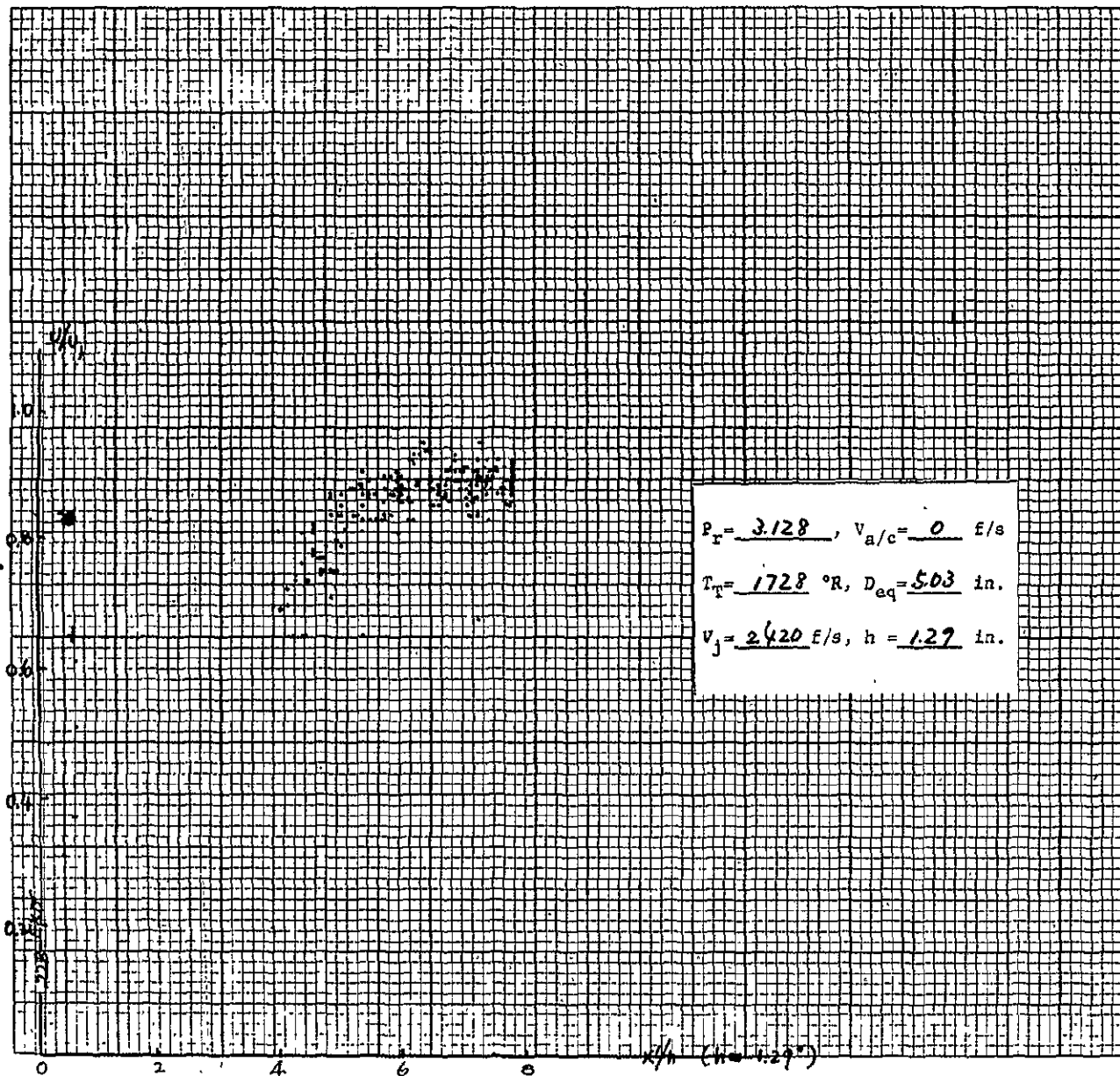
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1000 N. 10TH ST.
ANN ARBOR, MI 48106

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AXIAL: 120071 120071 120071



$$P_r = 3.128, V_{a/c} = 0 \text{ E/s}$$

$$T_T = 1728^\circ R, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2420 \text{ E/s, } h = 1.27 \text{ in.}$$

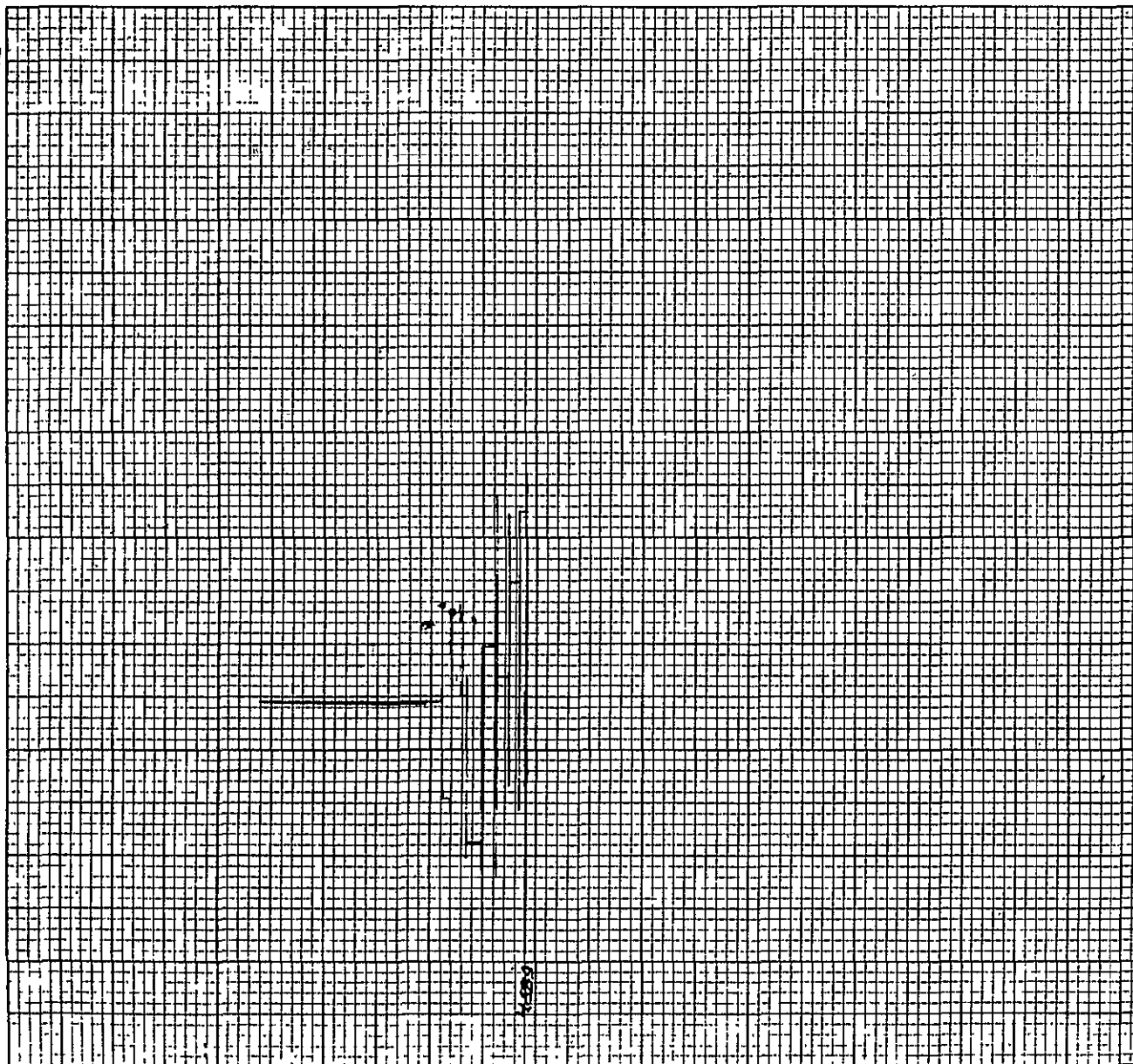
DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-758	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1245

GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
MADE IN U.S.A.
GRAPHIC CONTROLS CORPORATION

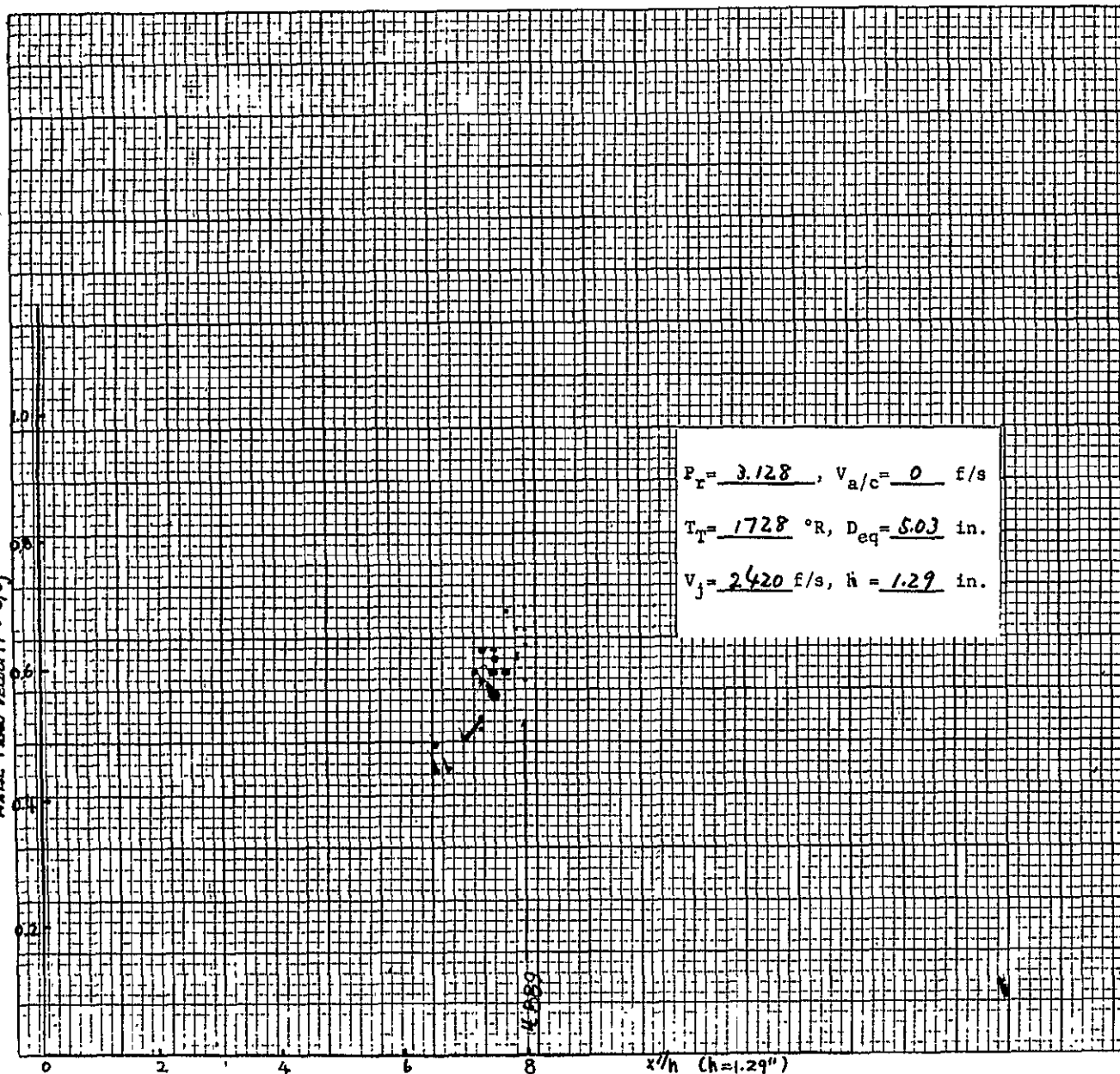


DATE: 5/20/82	NOZZLE: # 6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G-759	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1246

 NATIONAL
 BUREAU OF STANDARDS
 GAITHERSBURG, MARYLAND
 20899-0001

 ORIGINAL PAGE IS
 OF POOR QUALITY

 x/h : APPROXIMATE TO 10%


$$P_T = 3.128, V_{a/c} = 0 \text{ f/s}$$

$$T_T = 1728^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2420 \text{ f/s}, h = 1.29 \text{ in.}$$

DATE: 5/20/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G - 760

TRAVERSE DETAILS.

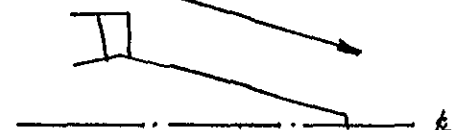
AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$ LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$ RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$ LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE.

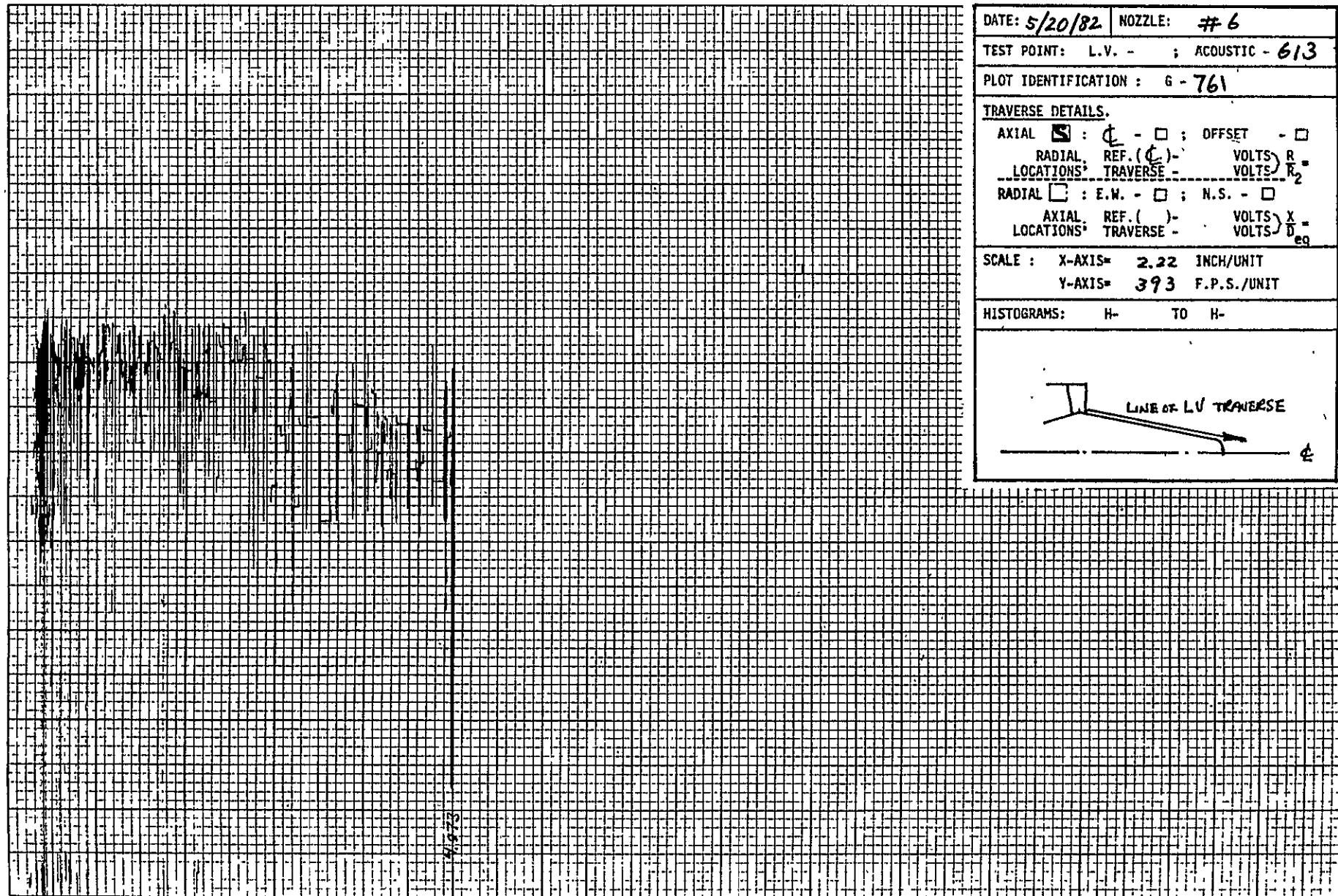


ORIGINAL PAGE 19
OF 100 QUALITY

1011 AX 0N

1247

NOTED FOR CORRECTION
REWORK REQUIRED
REWORK REQUIRED



DATE: 5/20/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G - 761

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2

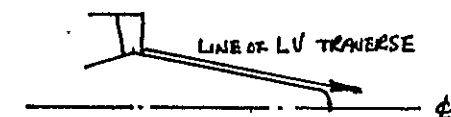
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

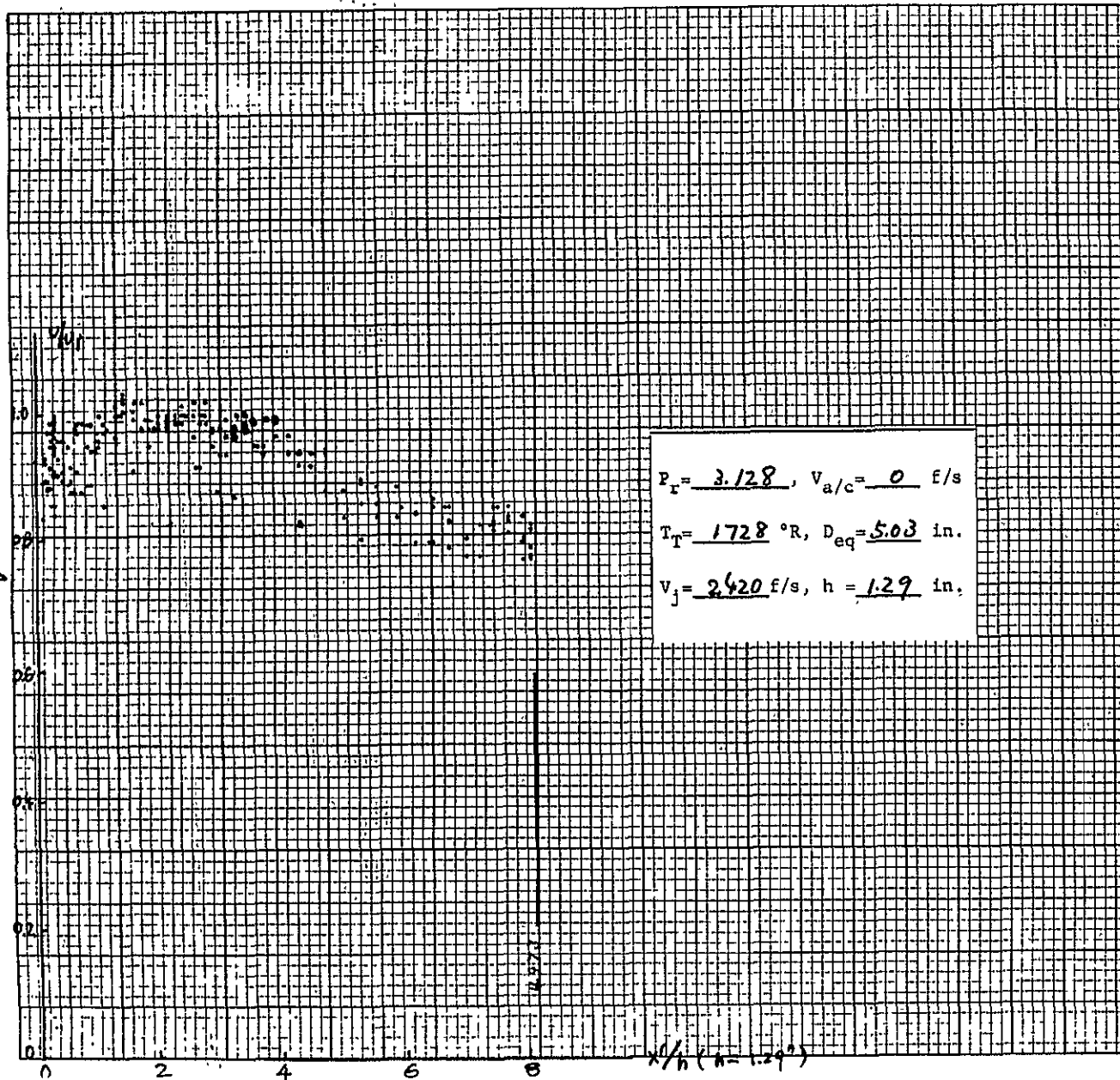


1011 AX OR

1248

NO. 1011 AX OR
1248
1011 AX OR

AXIAL: ALLOYED NICKEL TITANIUM

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OF POOR QUALITY

DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G-762	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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OF POOR QUALITY

1249

NOT FOR
REPRODUCTION
WITHOUT
PERMISSION
OF THE
NAVY
ENGINEERING
DIVISION

DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G - 762A	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL <input type="checkbox"/> : REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL <input type="checkbox"/> : REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

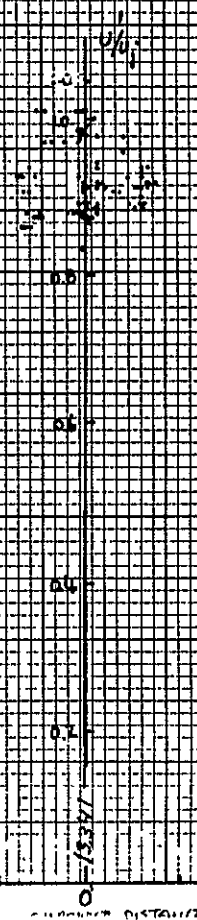
1011 AX NO.

1250

REPRODUCED BY THE
NATIONAL BUREAU OF STANDARDS
GALVESTON, TEXAS

ORIGINAL PAGE 19
OF POOR QUALITY

$P_r = 2.128$, $V_{a/c} = 0$ f/s
 $T_T = 1728$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2420$ f/s, $h = 1.29$ in.

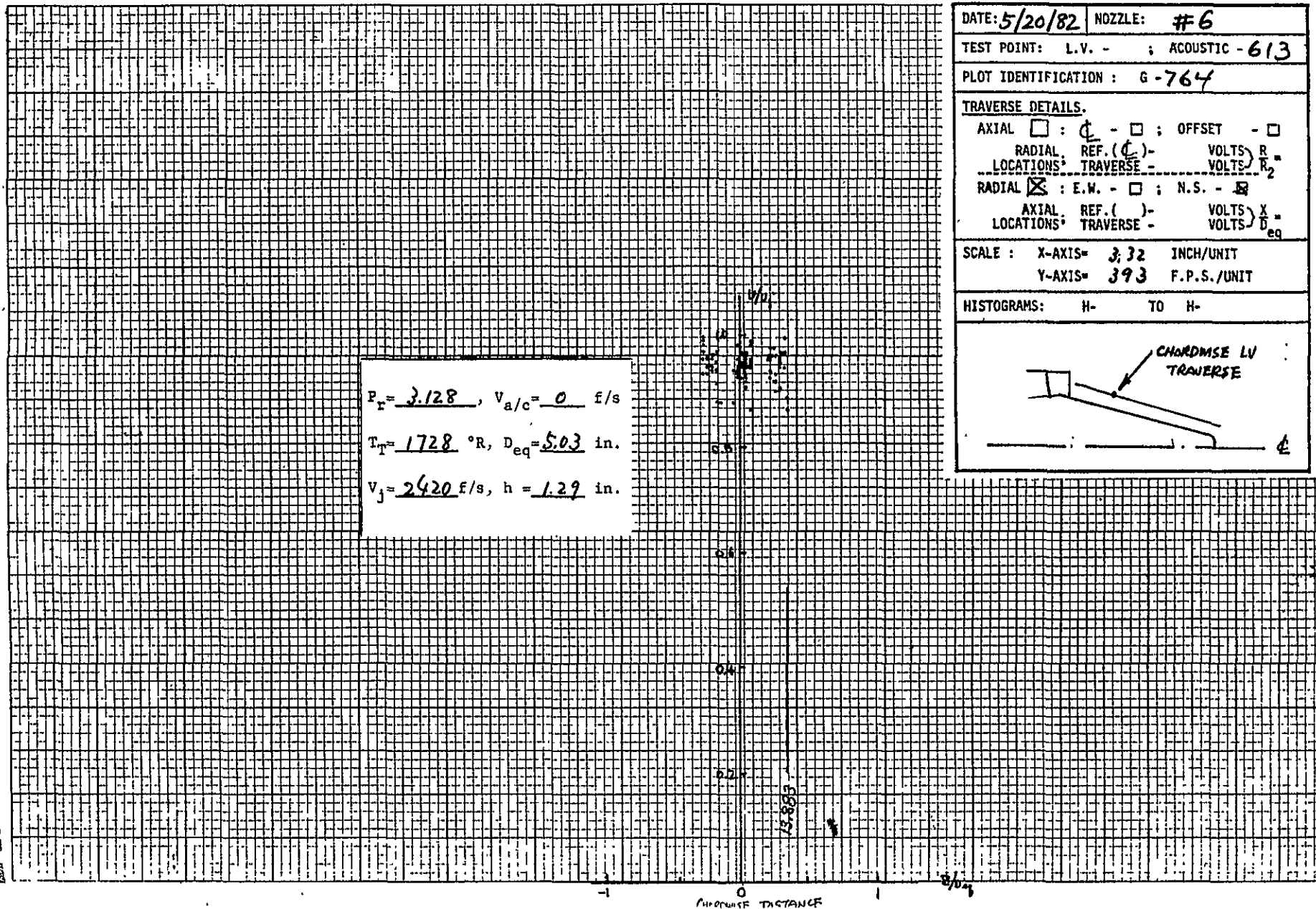


DATE: 5/20/82	NOZZLE: # 6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G - 762 ₁₃ - B	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1011 AX No.

1251

NOTATION: 1. 1/2" DIA. HOLE
2. 1/4" DIA. HOLE
3. 1/8" DIA. HOLE
4. 1/16" DIA. HOLE
5. 1/32" DIA. HOLE
6. 1/64" DIA. HOLE
7. 1/128" DIA. HOLE
8. 1/256" DIA. HOLE
9. 1/512" DIA. HOLE
10. 1/1024" DIA. HOLE
11. 1/2048" DIA. HOLE
12. 1/4096" DIA. HOLE
13. 1/8192" DIA. HOLE
14. 1/16384" DIA. HOLE
15. 1/32768" DIA. HOLE
16. 1/65536" DIA. HOLE
17. 1/131072" DIA. HOLE
18. 1/262144" DIA. HOLE
19. 1/524288" DIA. HOLE
20. 1/1048576" DIA. HOLE
21. 1/2097152" DIA. HOLE
22. 1/4194304" DIA. HOLE
23. 1/8388608" DIA. HOLE
24. 1/16777216" DIA. HOLE
25. 1/33554432" DIA. HOLE
26. 1/67108864" DIA. HOLE
27. 1/134217728" DIA. HOLE
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29. 1/536870912" DIA. HOLE
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218. 1/421249166674228746791672110734681729275580381602196445017243902144" DIA. HOLE
219. 1/842498333348457493583344221469363458551160763204392890034487804288" DIA. HOLE
220. 1/1684996666696914987166688442938726917102321526408785780068975608576" DIA. HOLE
221. 1/3369993333393829974333376885877453834204643052817571560137951217152" DIA. HOLE
222. 1/6739986666787659948666753771754907668409286105635143120275902434304" DIA. HOLE
223. 1/13479973333575319897333507543509815336818572211270286240551804868608" DIA. HOLE
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225. 1/53919893334301279589334030174039261347274288845081144962207219474432" DIA. HOLE
226. 1/107839786668602559178668060348078522694548577690162289924414438948864" DIA. HOLE
227. 1/215679573337205118357336120696157045389097155380324579848828877897728" DIA. HOLE
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229. 1/862718293348820473429344482784628181556388621521298319395315511590912" DIA. HOLE
230. 1/1725436586697640946858688965569256363112777243042596638790631023181824" DIA. HOLE
231. 1/3450873173395281893717377931138512726225554486085193277581262046363648" DIA. HOLE
232. 1/6901746346790563787434755862277025452451108972170386555162524092727296" DIA. HOLE
233. 1/13803492693581127574869511724554050904902217944340773110325048185454592" DIA. HOLE
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243. 1/1413477651822



DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 6/3
PLOT IDENTIFICATION: G - 765	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ;	OFFSET - <input type="checkbox"/>
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ;	N.S. - <input checked="" type="checkbox"/>
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

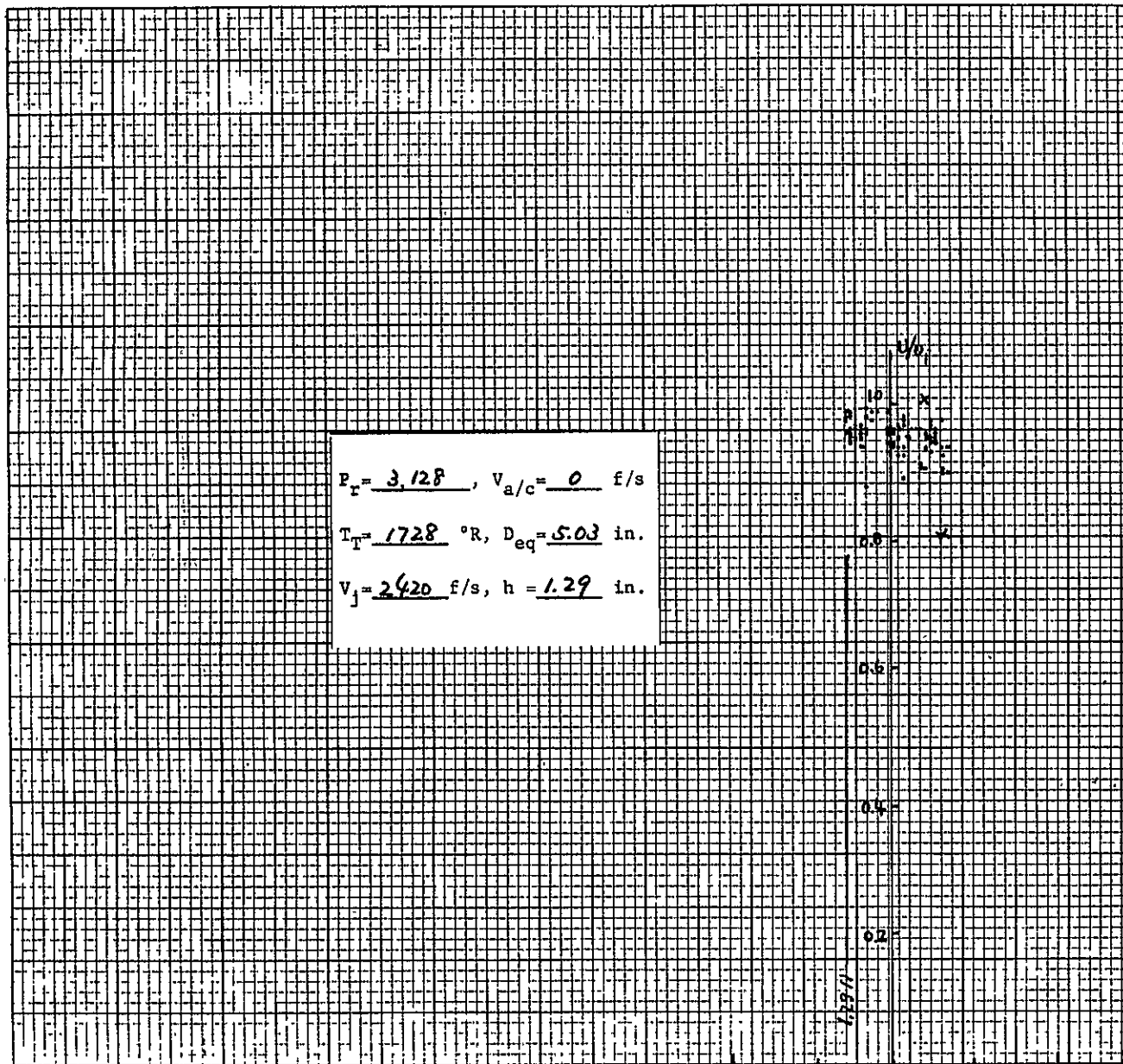
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1254

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BUFFALO, NEW YORK

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$P_r = 3.128$, $V_{a/c} = 0$ f/s
 $T_T = 1728$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2420$ f/s, $h = 1.29$ in.

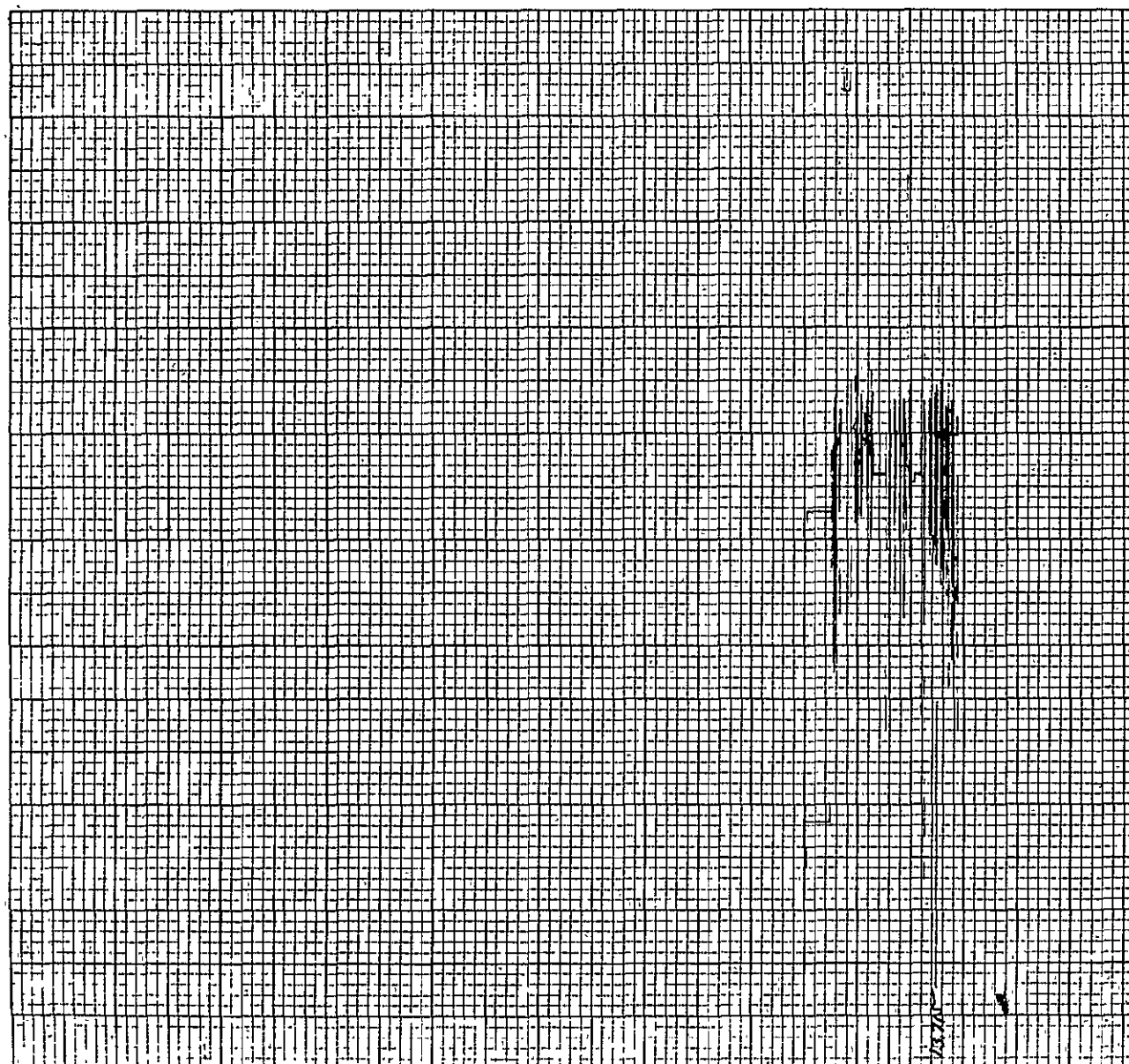
DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G-766	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 332 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 613
PLOT IDENTIFICATION: G - 767	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1 -
LOCATIONS: TRAVERSE -	VOLTS R_2 -
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X -
LOCATIONS: TRAVERSE -	VOLTS D_{eq} -
SCALE: X-AXIS= 3.32	INCH/UNIT
Y-AXIS= 39.3	F.P.S./UNIT
HISTOGRAMS: H-	TO H-

DATE: 5/20/80 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-770

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (C) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☒

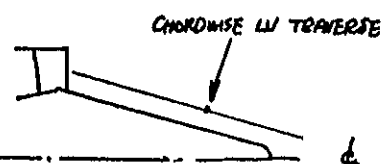
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.32 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



$P_r = 3.128$, $V_{a/c} = 0$ f/s

$T_r = 1728$ °R, $D_{eq} = 5.03$ in.

$V_j = 2420$ f/s, $h = 1.29$ in.

CHORDWISE DISTANCE

CHORDWISE DISTANCE

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NOTATION: CORRECTED CHORDWISE DISTANCE
ELEVATION: 1258

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DATE: 5/20/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G - 771

TRAVERSE DETAILS

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☐ ; N.S. - ☒

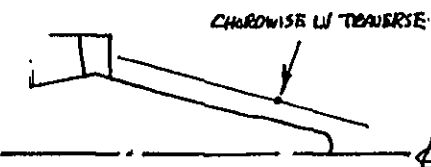
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.32 INCH/UNIT

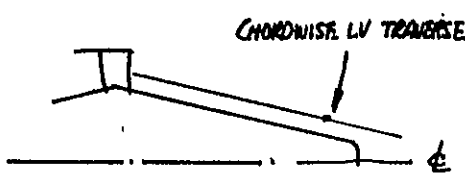
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



NO MINI HISTOGRAM

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FOR QUANTITATIVE ANALYSIS

DATE: 5/20/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G - 772	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
	

DATE: 5/24/82 NOZZLE: # 6

TEST POINT: L.V. - ; ACOUSTIC - 613

PLOT IDENTIFICATION: G-773

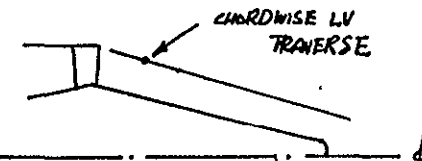
TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☒AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.32 INCH/UNIT

Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-

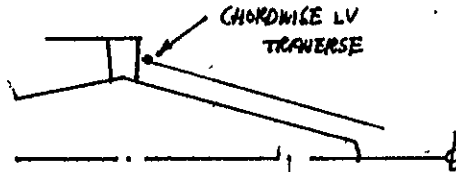


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1262

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RESEARCH AND DEVELOPMENT
COMMITTEE
AERONAUTICAL SYSTEMS
DIVISION
WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO 45433-6151ORIGINAL PAGE IS
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DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G-774	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
	

1263

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GRAPHIC ENGINEERING

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DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 613	
PLOT IDENTIFICATION: G-775	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input checked="" type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

BBO DATA

END OF T.P. 613

5/24/82

10:45 AM

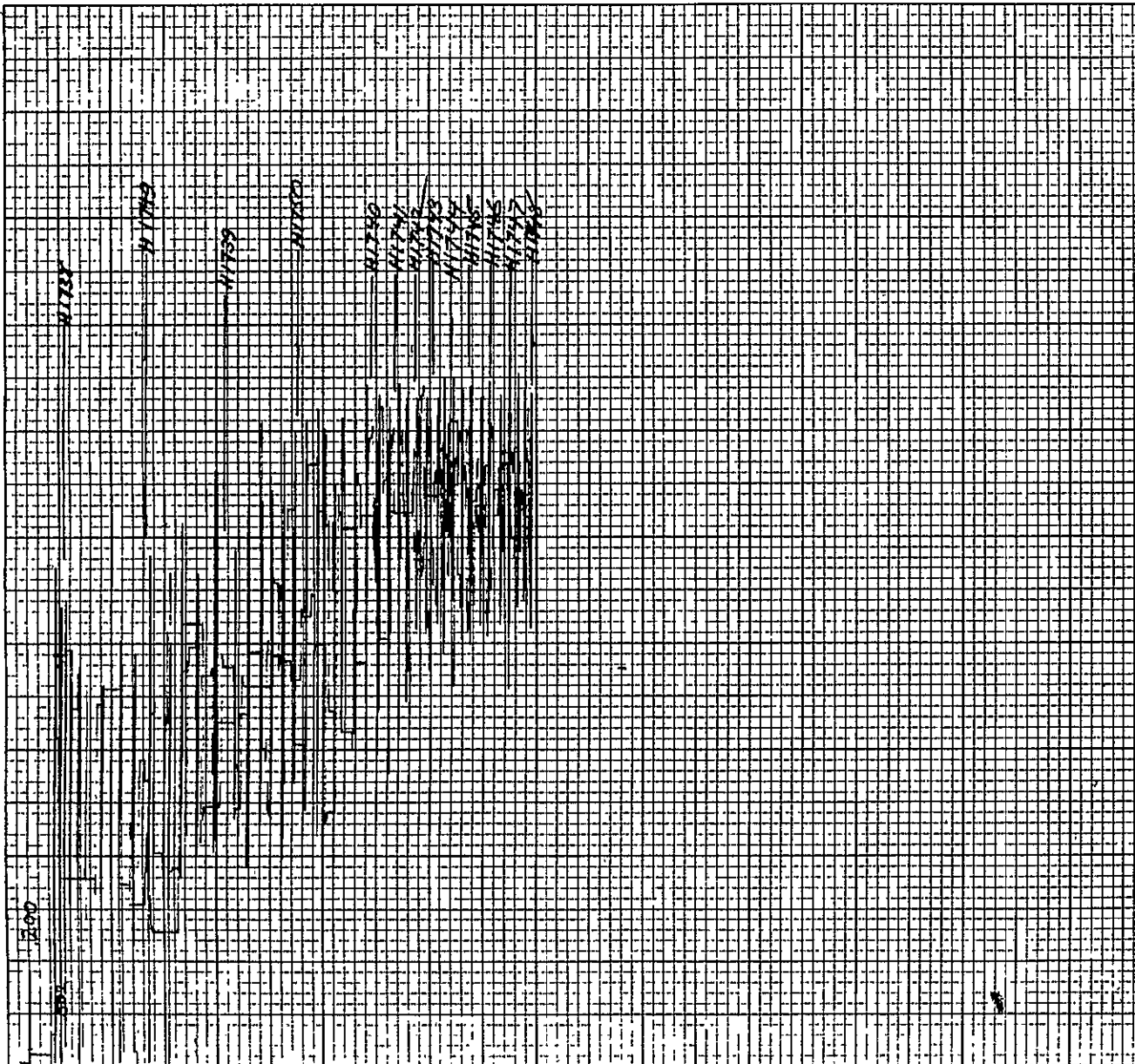
Model 6
Test Point 614

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DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 776	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- 1738 TO H- 1748	

C-8

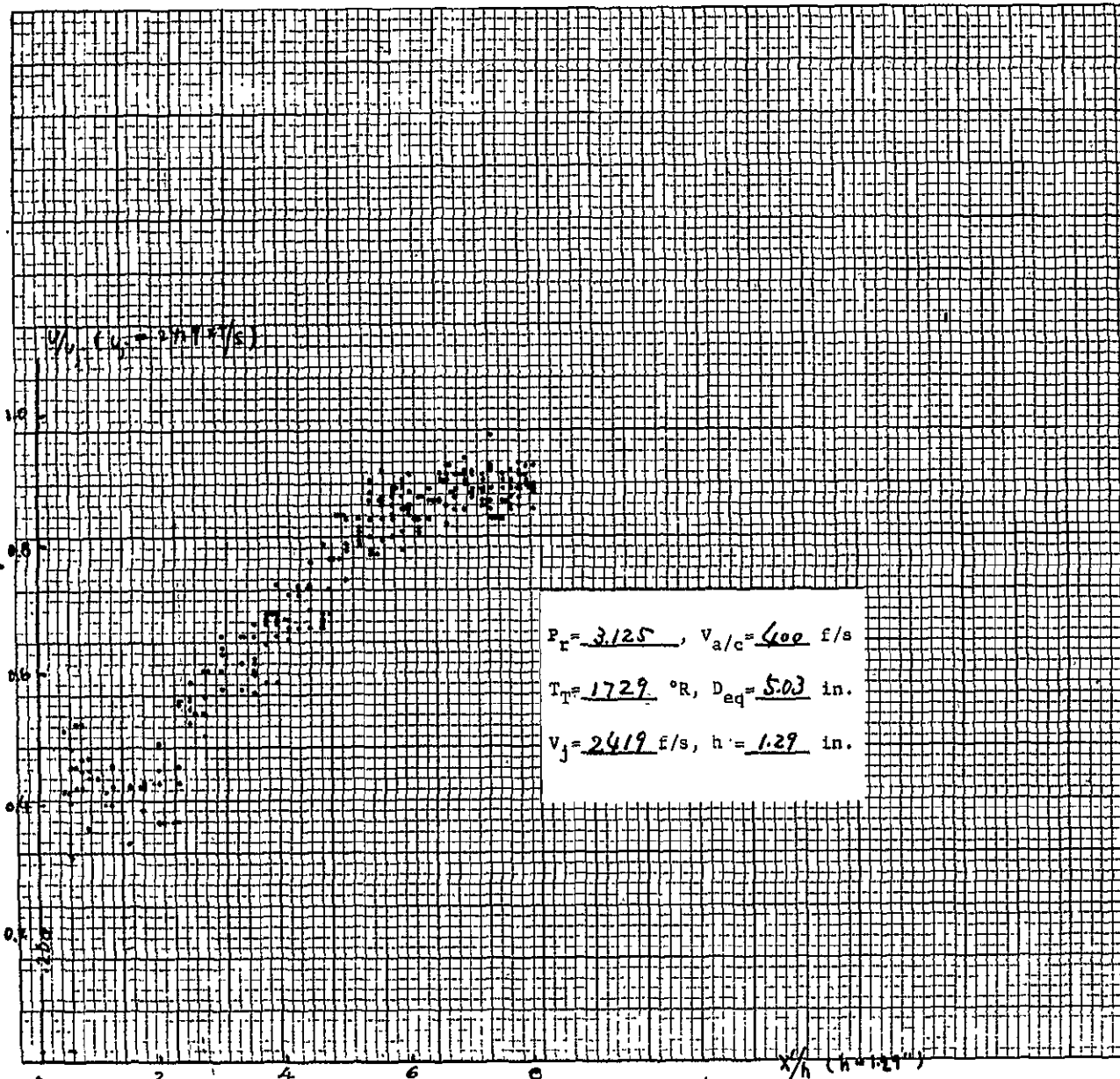
MO. 1011 XX

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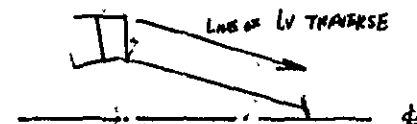
QUALITY: 0/0



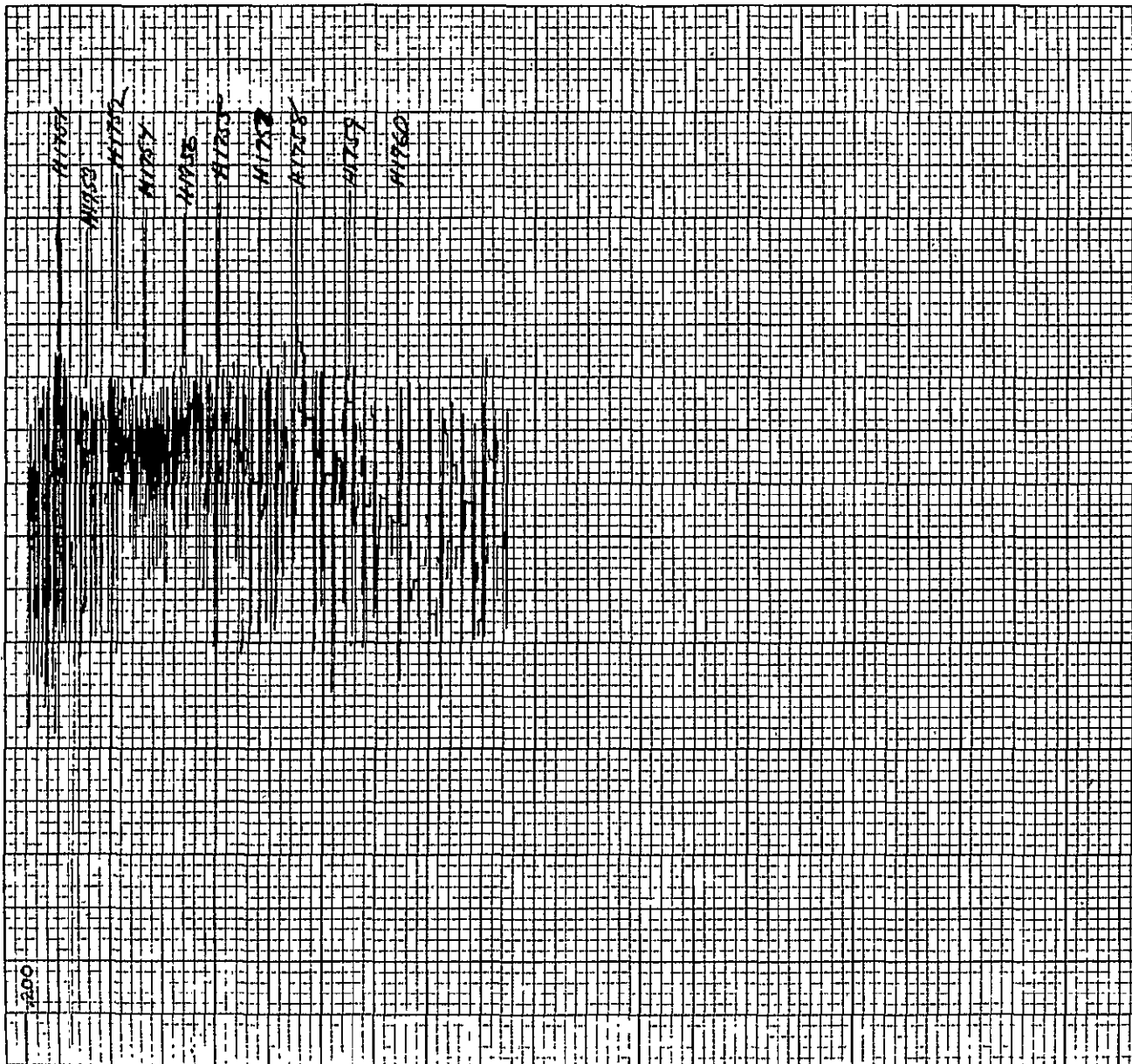
DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G-777	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	

SCALE: X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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DATE: 5/29/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 614


PLOT IDENTIFICATION: G-778

TRAVERSE DETAILS.

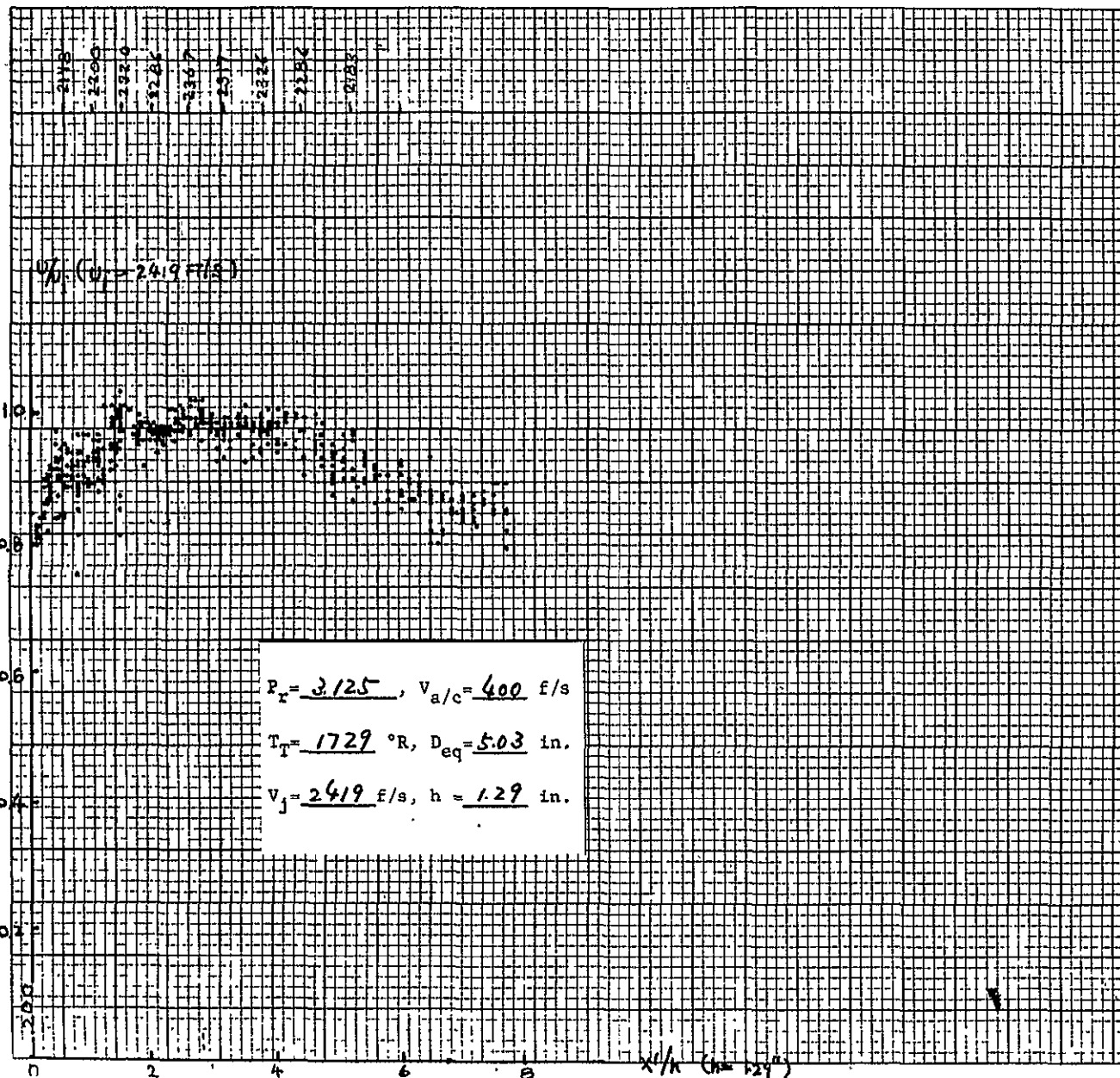
AXIAL ☒ : ☒ - ☐ ; OFFSET - ☐
RADIAL REF. (C) - VOLTS R_1 =
LOCATIONS: TRAVERSE - VOLTS R_2 =
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS X =
LOCATIONS: TRAVERSE - VOLTS D_{eq} =

SCALE: X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 393 F.P.S./UNIT

HISTOGRAMS: H-1751 TO H-1760



100: ALDUTEN 1024 1024



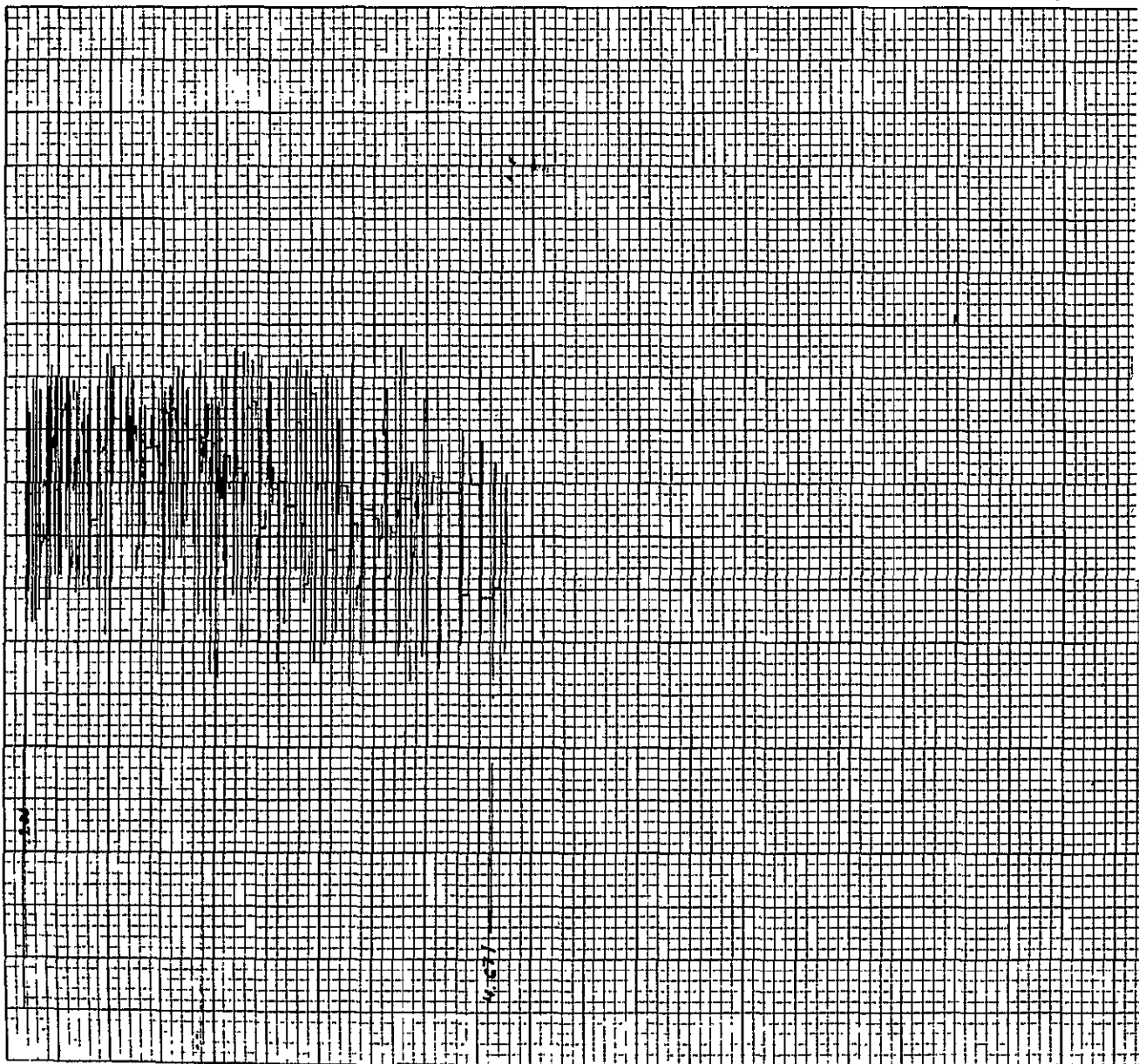
DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G-779	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. () - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 398 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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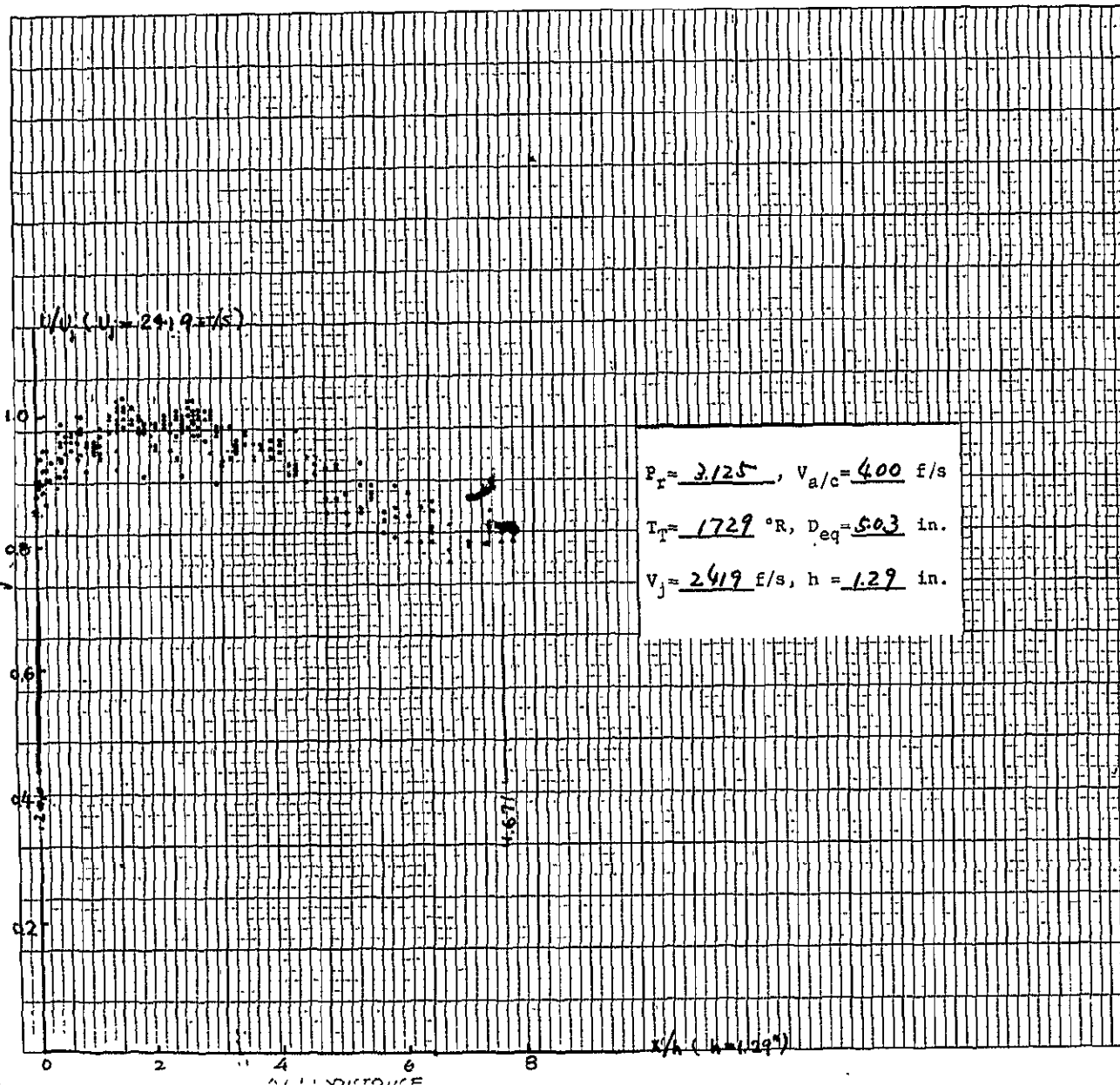
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DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G-780	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

AXIAL VELOCITY

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$$P_T = 3.125, V_{a/c} = 4.00 \text{ f/s}$$

$$T_T = 1729^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2419 \text{ f/s}, h = 1.29 \text{ in.}$$

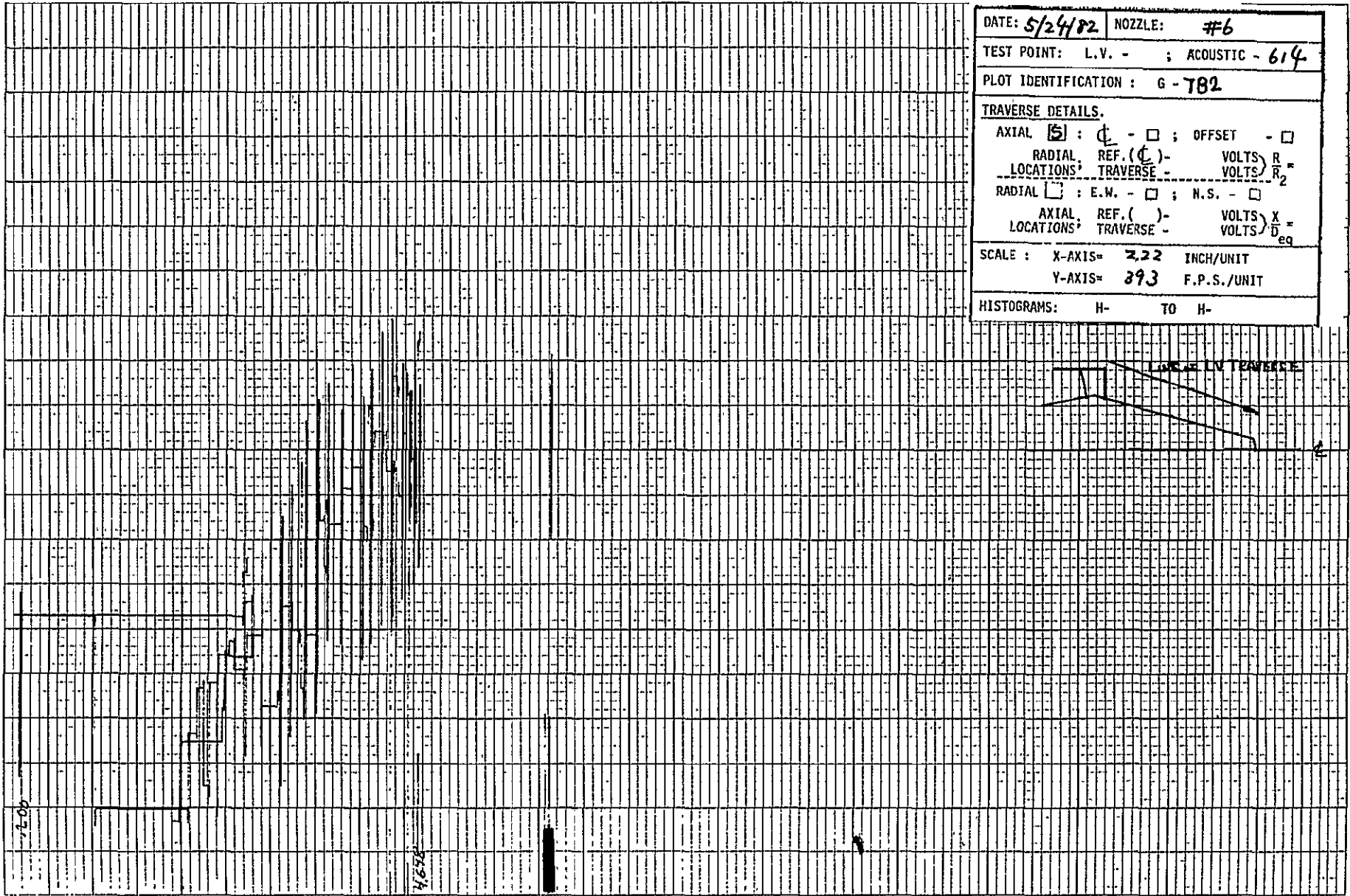
DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-781	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (<input checked="" type="checkbox"/>) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



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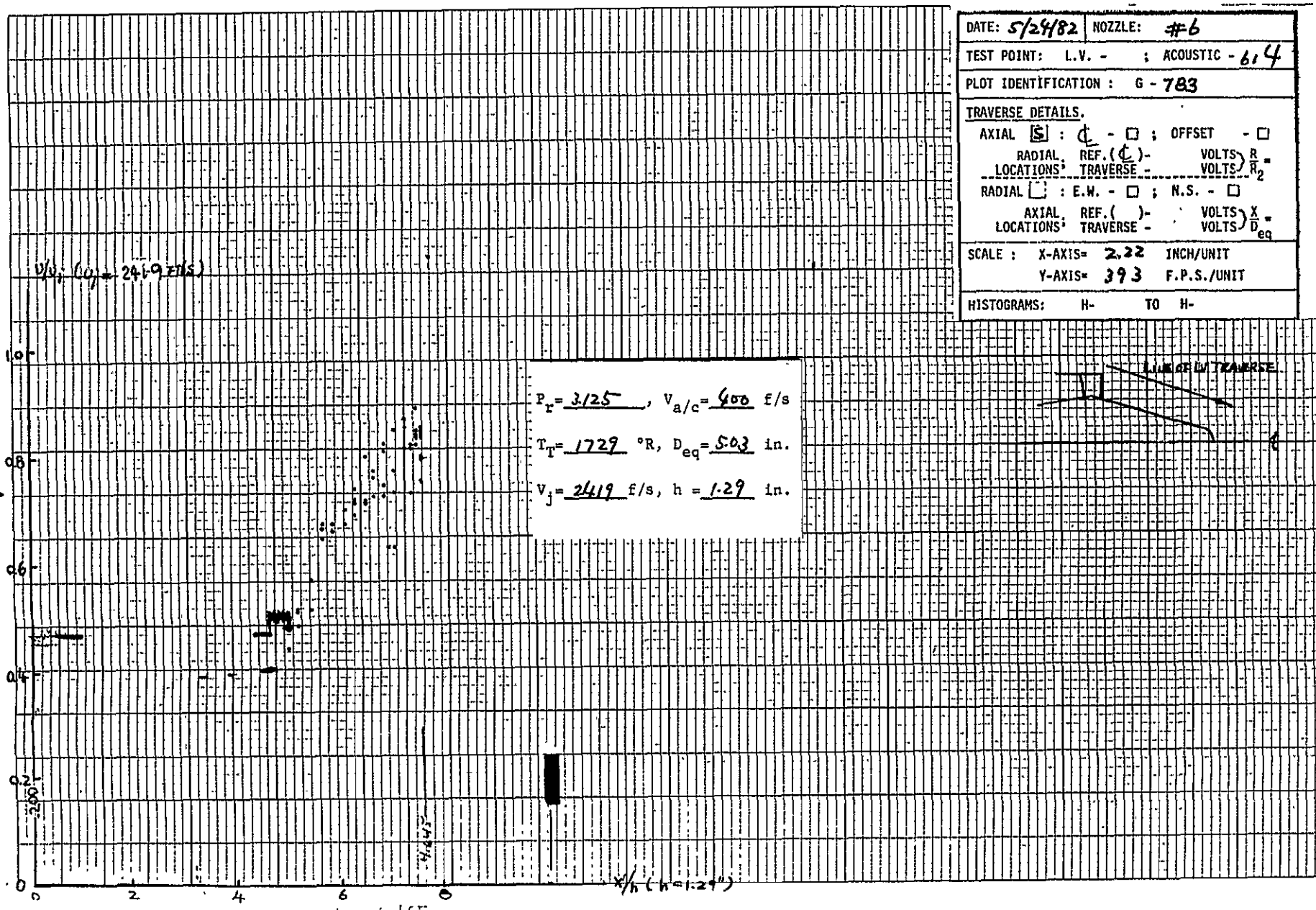


DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G-782	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 893 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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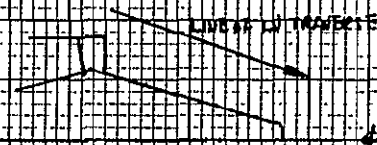
AXIAL MEAN VELOCITY: u_{0j}

1272



1273

DATE: 5/24/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 784	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 393 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

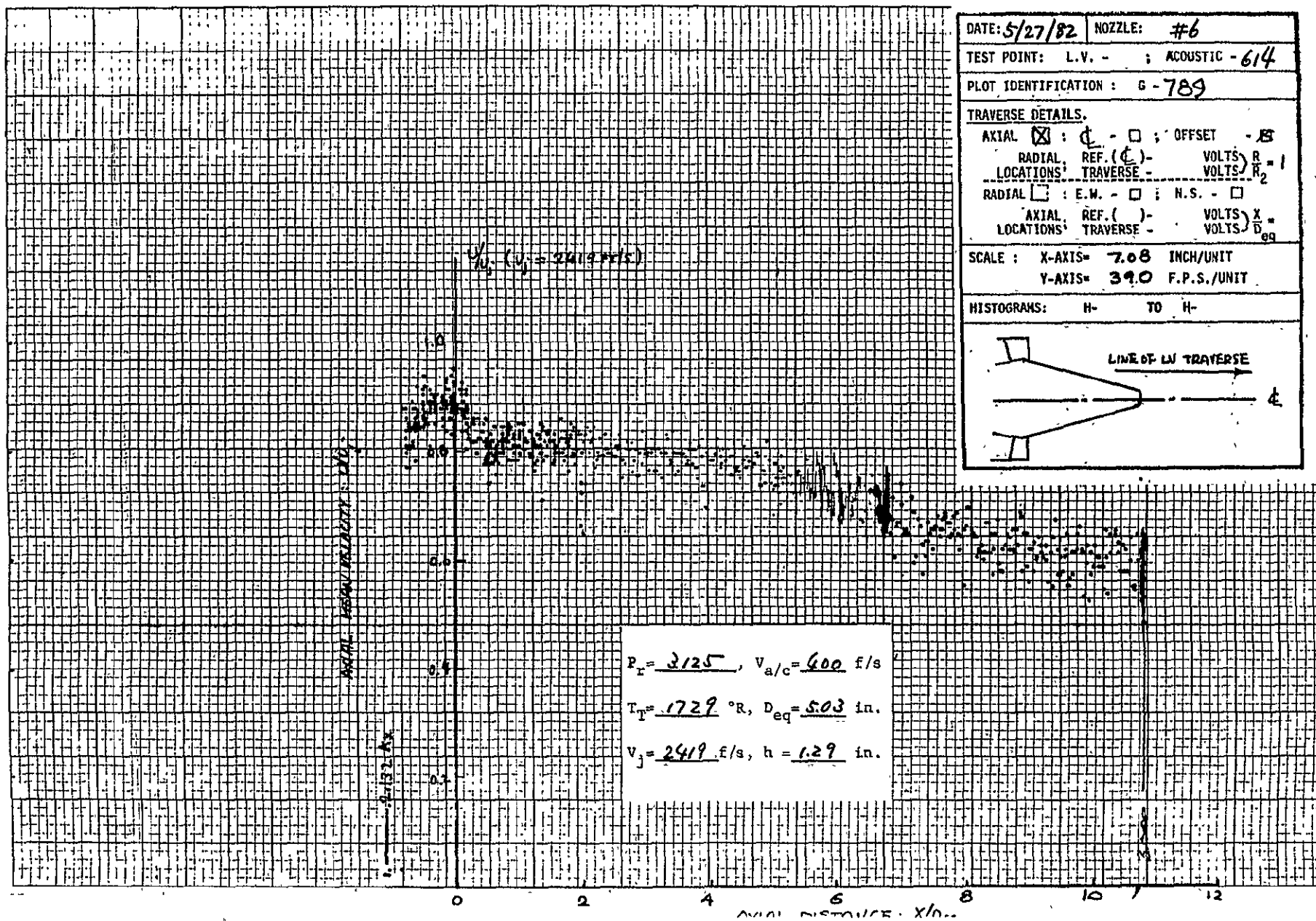
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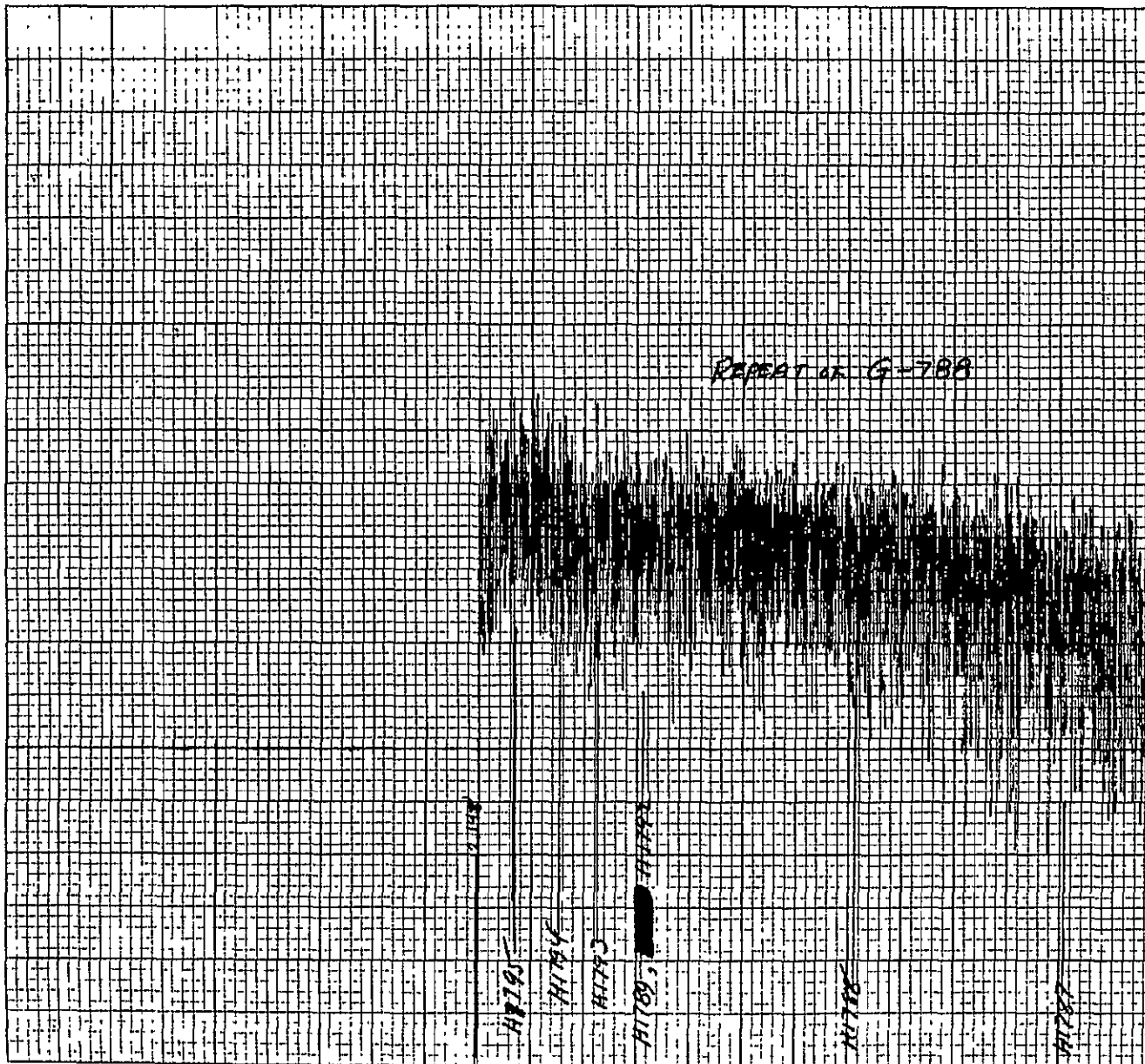
DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-789	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - 18	
RADIAL REF. (ϕ) -	VOLTS $R_2 = 1$
LOCATIONS: TRAVERSE -	VOLTS $R_2 = 1$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS = 7.08 INCH/UNIT	
Y-AXIS = 39.0 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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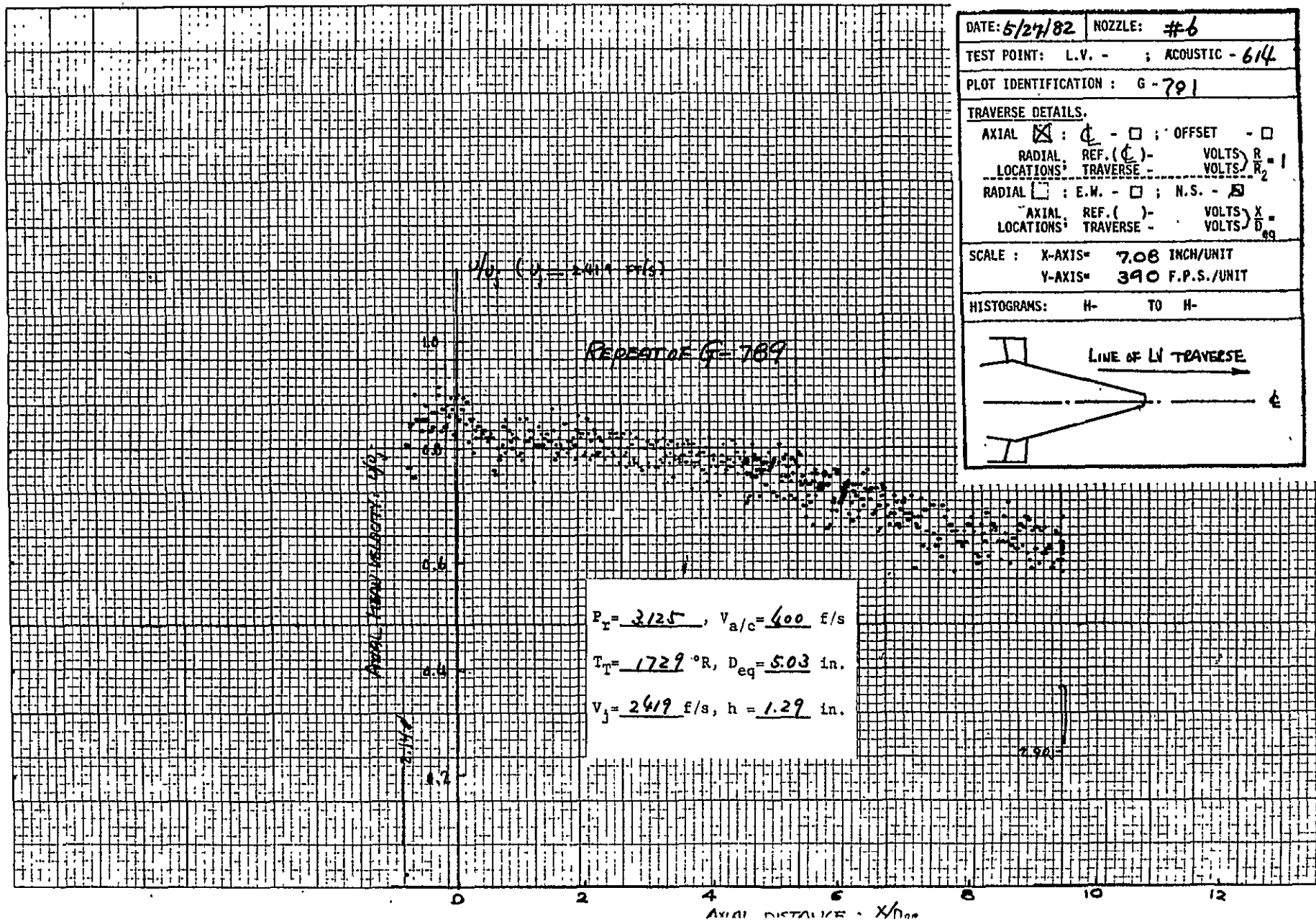
1011 AX 04

1279

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DATE: 5/29/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G - 790	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/> RADIAL REF. (ϕ) - VOLTS R_1 LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/> AXIAL REF. () - VOLTS X LOCATIONS: TRAVERSE - VOLTS D	
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H-1786 TO H-1795	
LINE OF LI TRAVERSE	

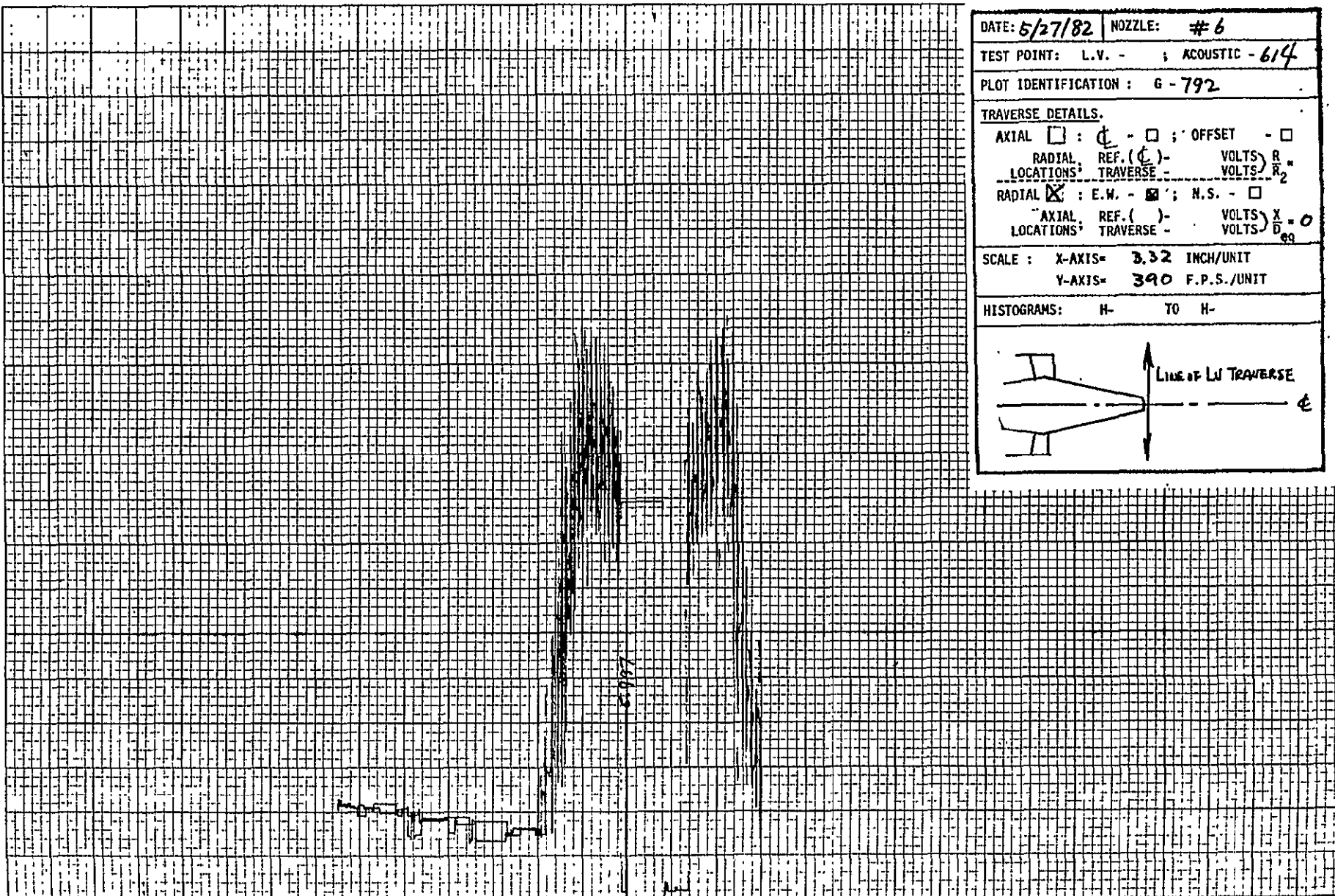


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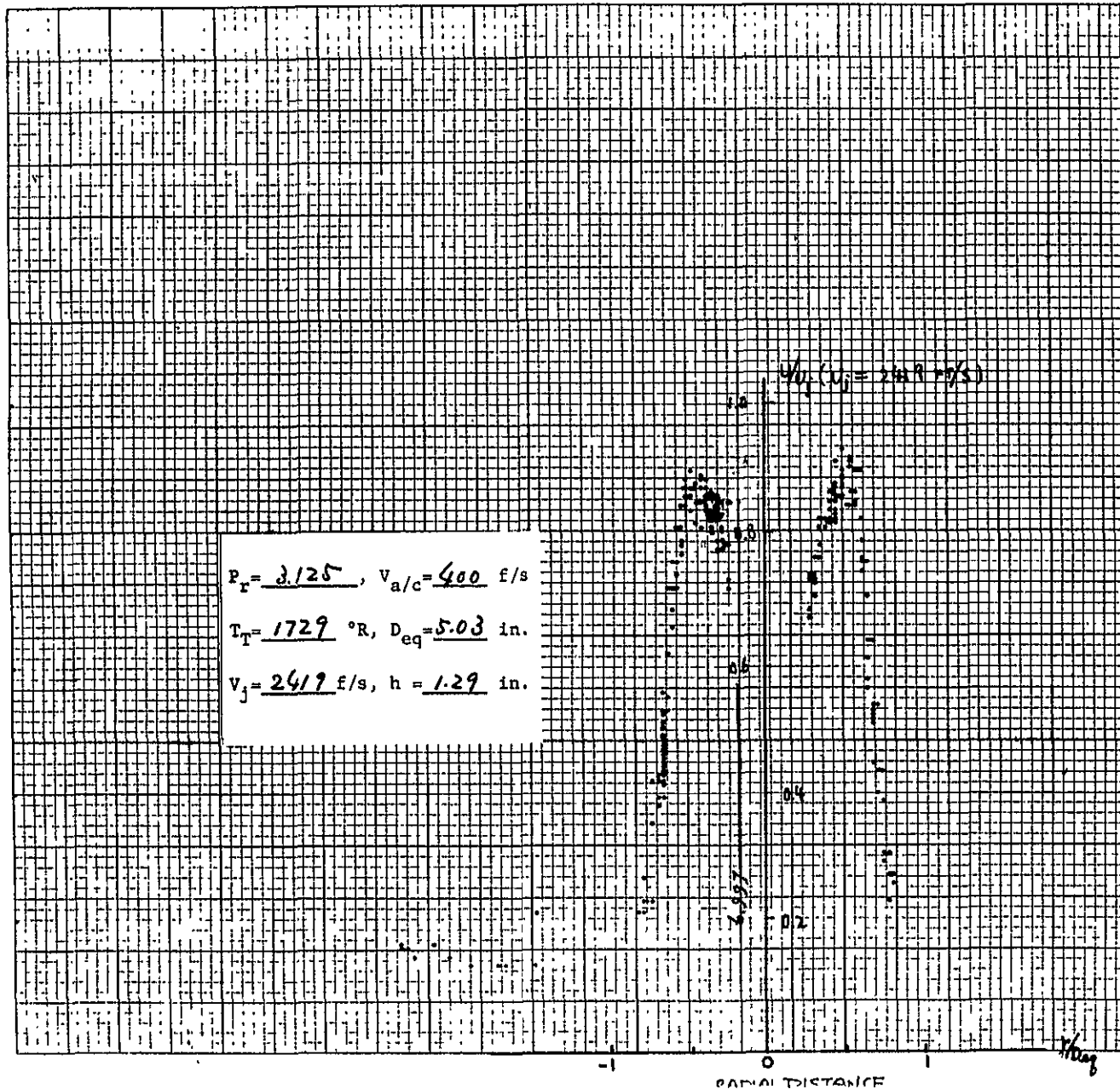


DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-792	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1282

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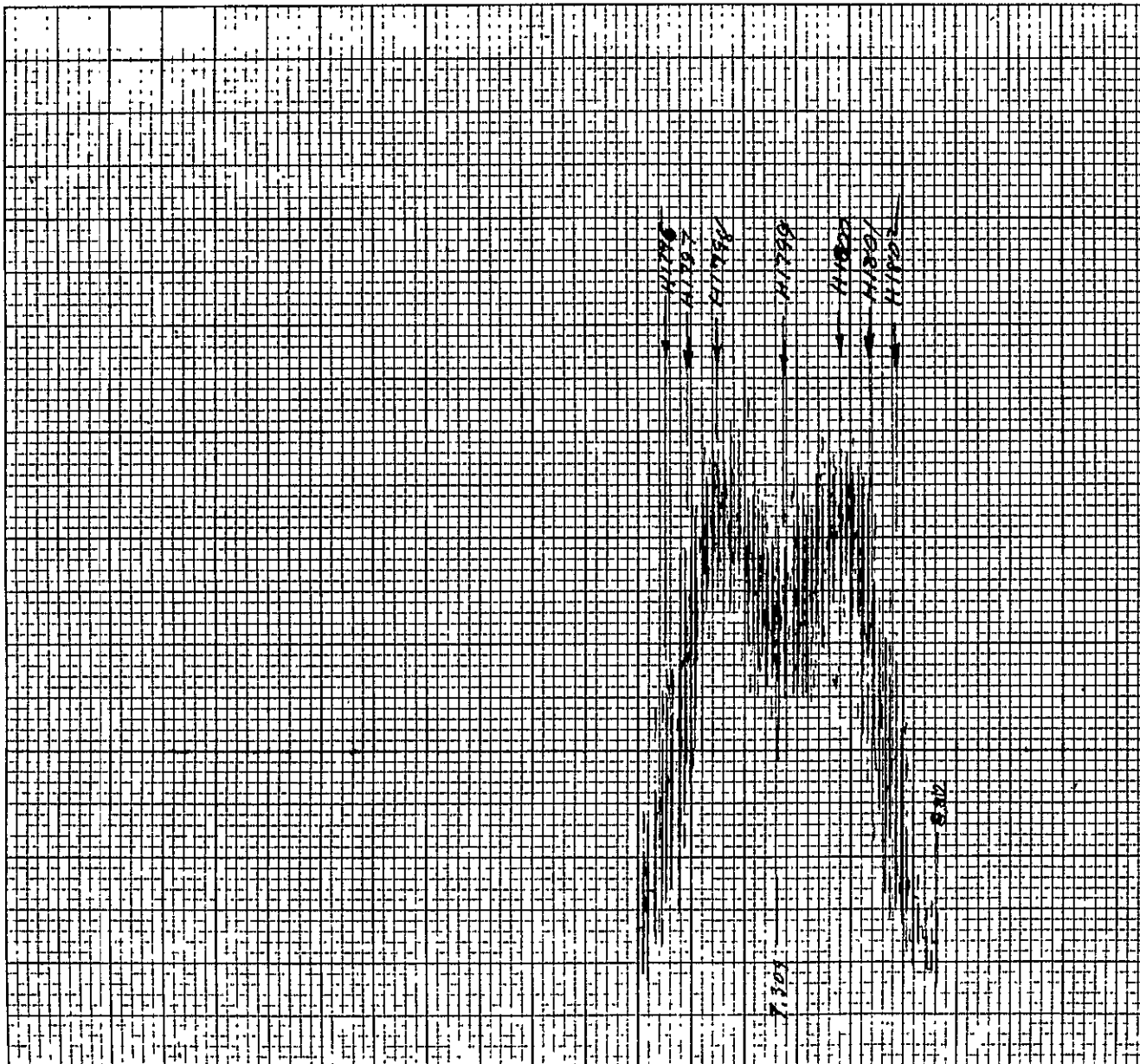


DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G-793	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $X = 0$	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

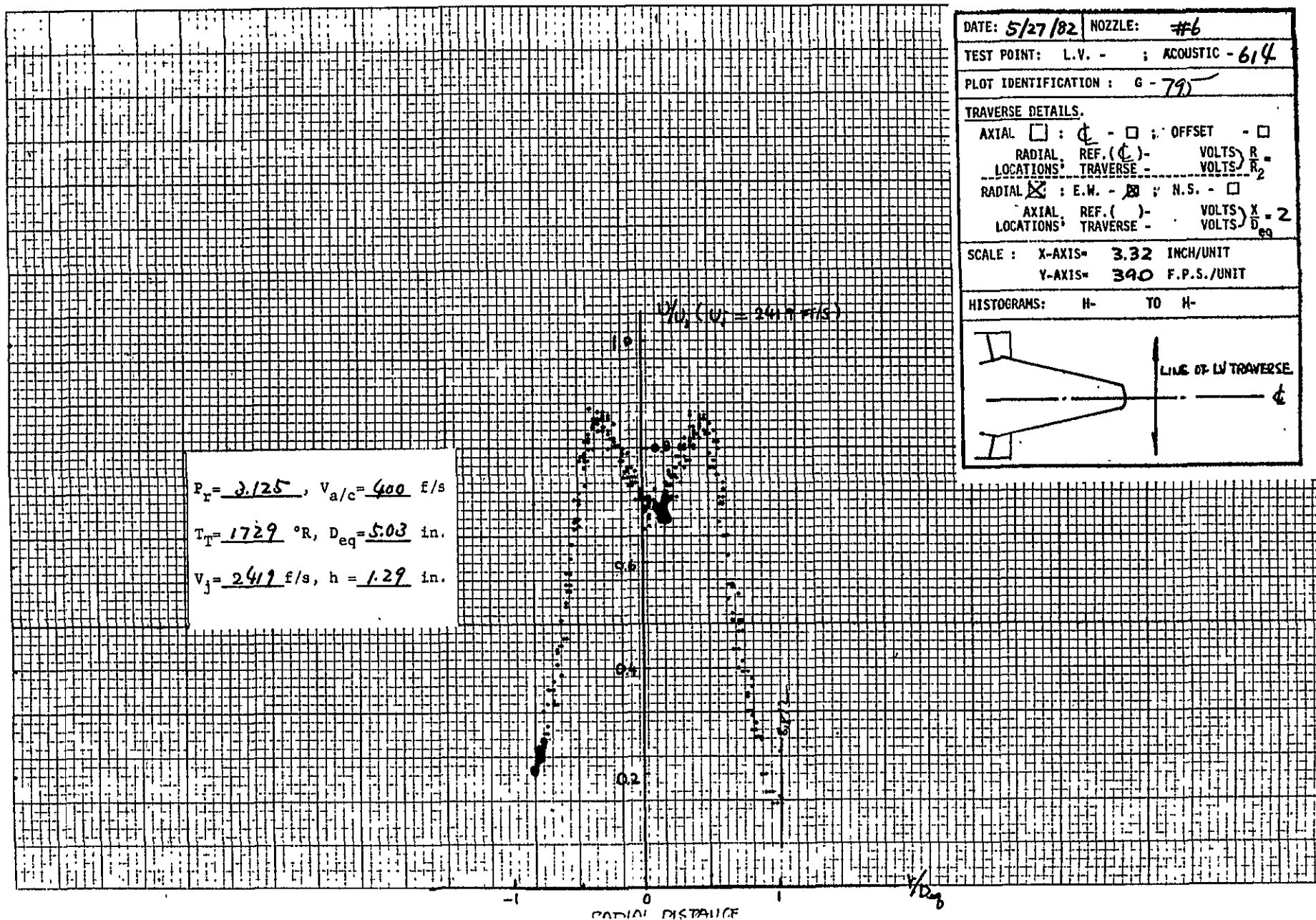
1283

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DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-794	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{99}
LOCATIONS: TRAVERSE -	VOLTS D_{99}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H-1796 TO H-1802	

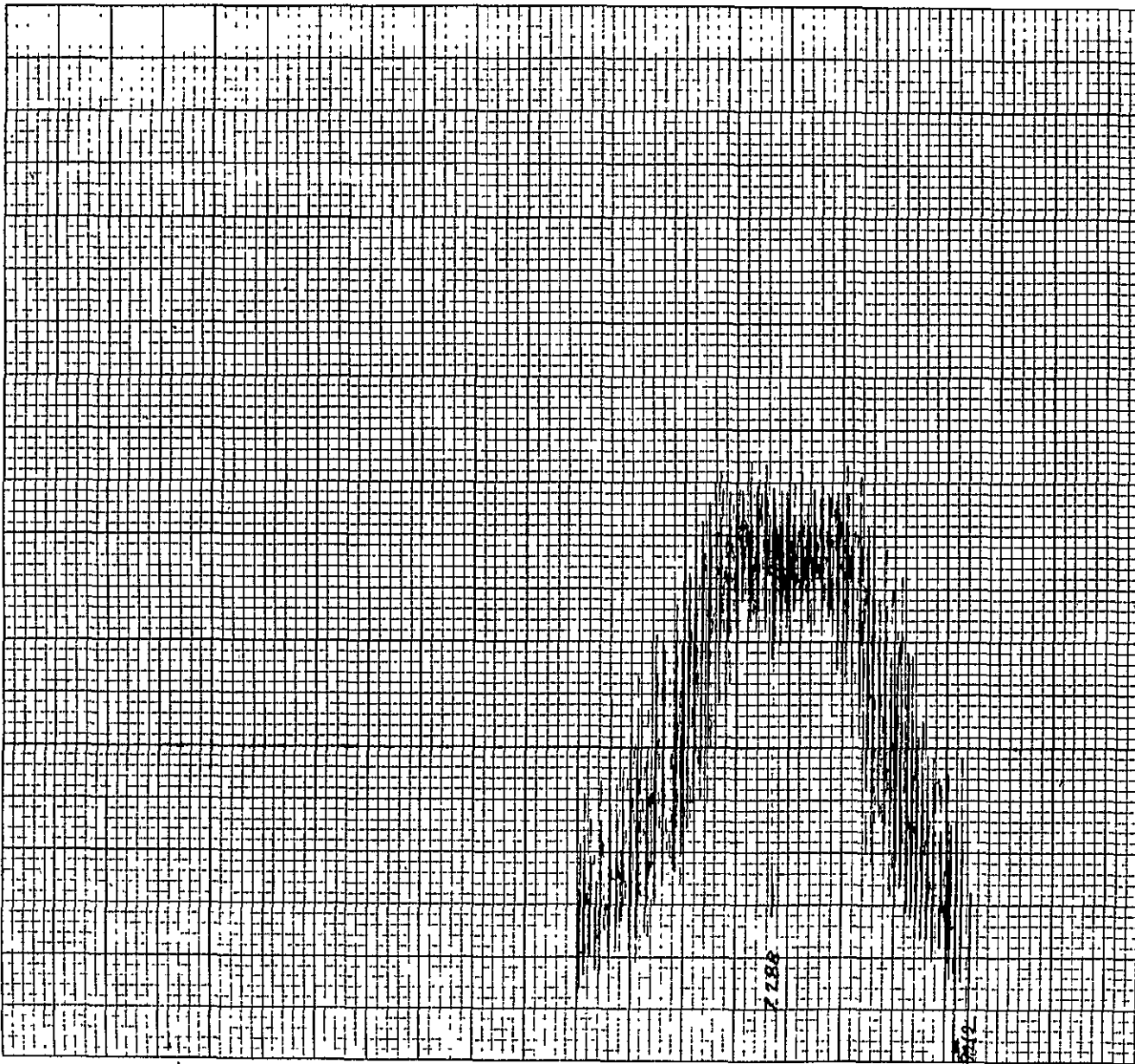


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1011 AX 100

1285

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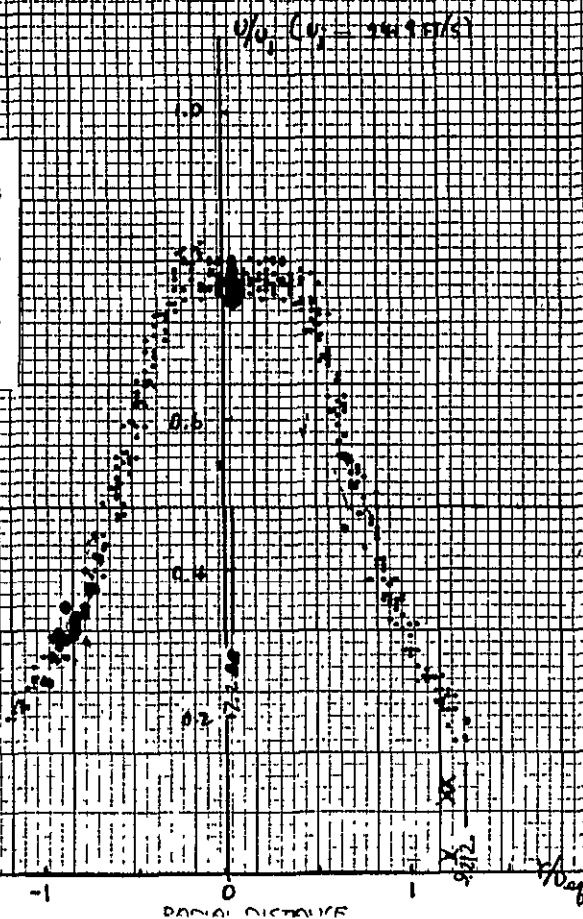


DATE: 5/7/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 796	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1 =
LOCATIONS: TRAVERSE	VOLTS R_2 =
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X = 6
LOCATIONS: TRAVERSE -	VOLTS Y = 6
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

$$P_r = 3.125, V_{a/c} = 400 \text{ F/S}$$

$$T_T = 1729 \text{ }^\circ\text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 2419 \text{ F/S}, h = 1.29 \text{ in.}$$



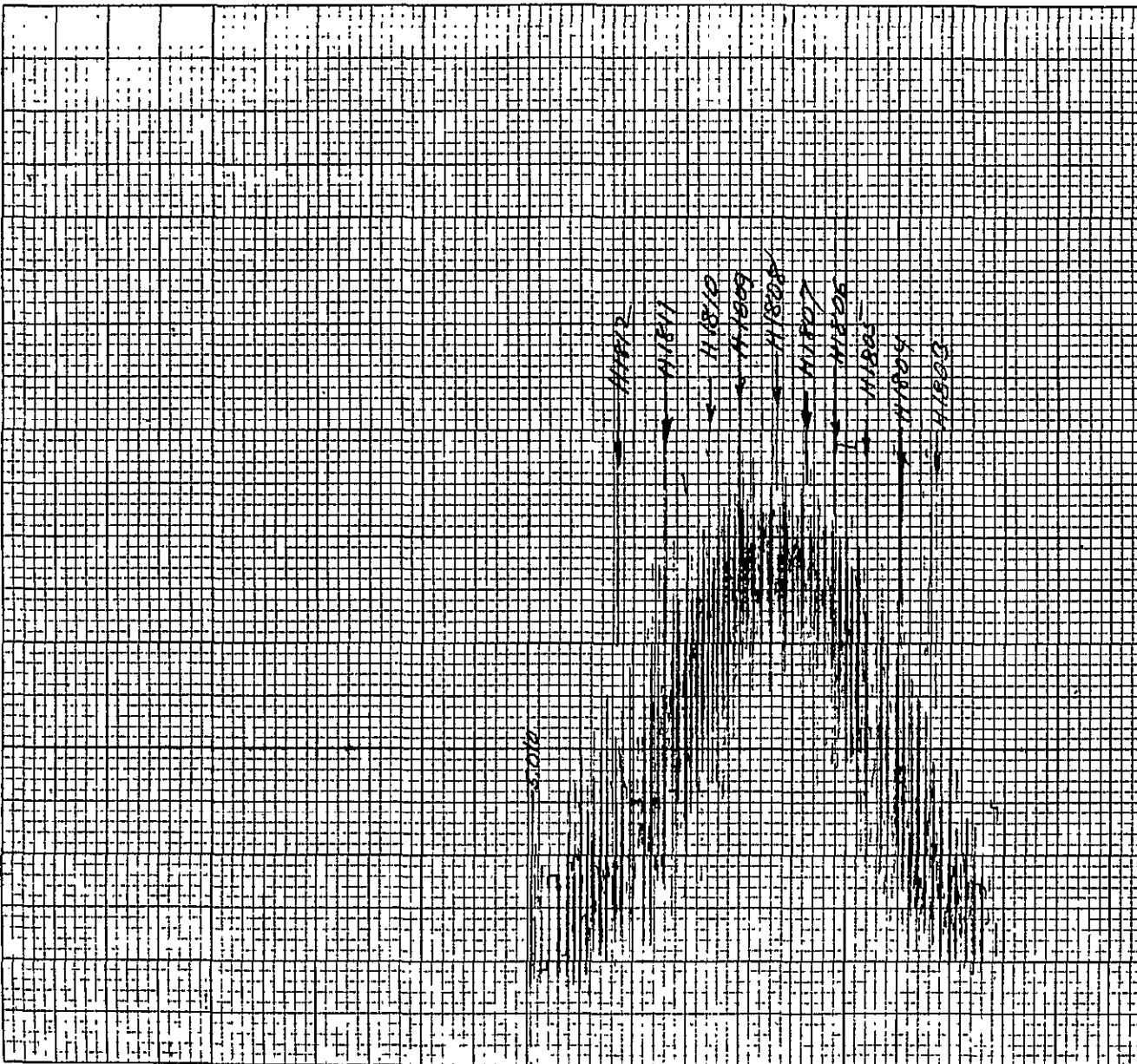
DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G-797	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) - VOLTS R_1	
LOCATIONS, TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. (ϕ) - VOLTS X	
LOCATIONS, TRAVERSE - VOLTS D	$X = 6$ $D = 99$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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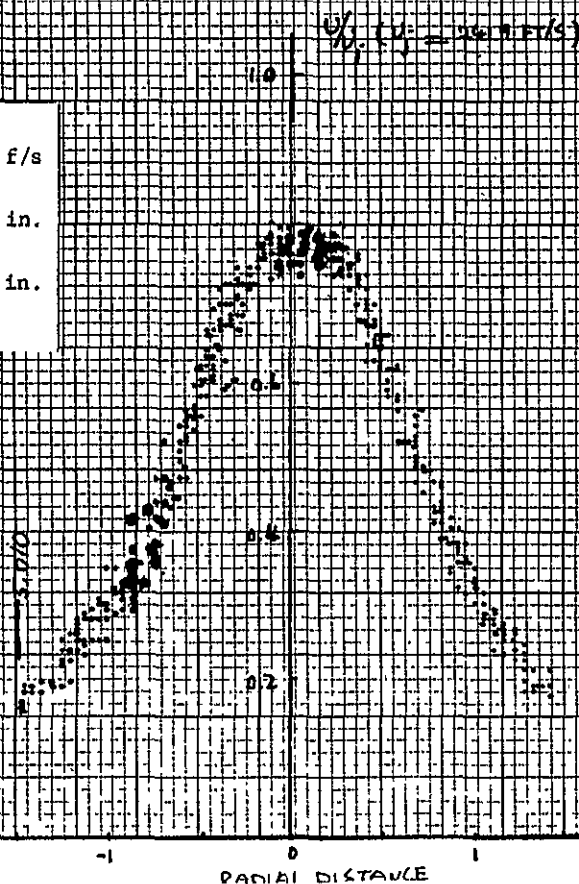
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DENVER, CO 80202



DATE: 5/27/82	NOZZLE: # 6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 798	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{99}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{99}}$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H-1803 TO H-1812	

$P_r = 3.125$, $V_{a/c} = 400$ f/s
 $T_T = 1729$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2419$ f/s, $h = 1.29$ in.



DATE: 5/27/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 614

PLOT IDENTIFICATION: G-799

TRAVERSE DETAILS.

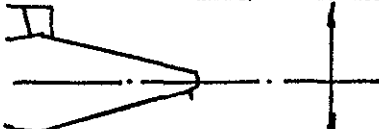
AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE - VOLTS $\frac{R}{R_2}$

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐
AXIAL REF. () - VOLTS $\frac{X}{D}$
LOCATIONS TRAVERSE - VOLTS $\frac{X}{D}$

SCALE: X-AXIS= 3.32 INCH/UNIT
Y-AXIS= 390 F.P.S./UNIT.

HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE

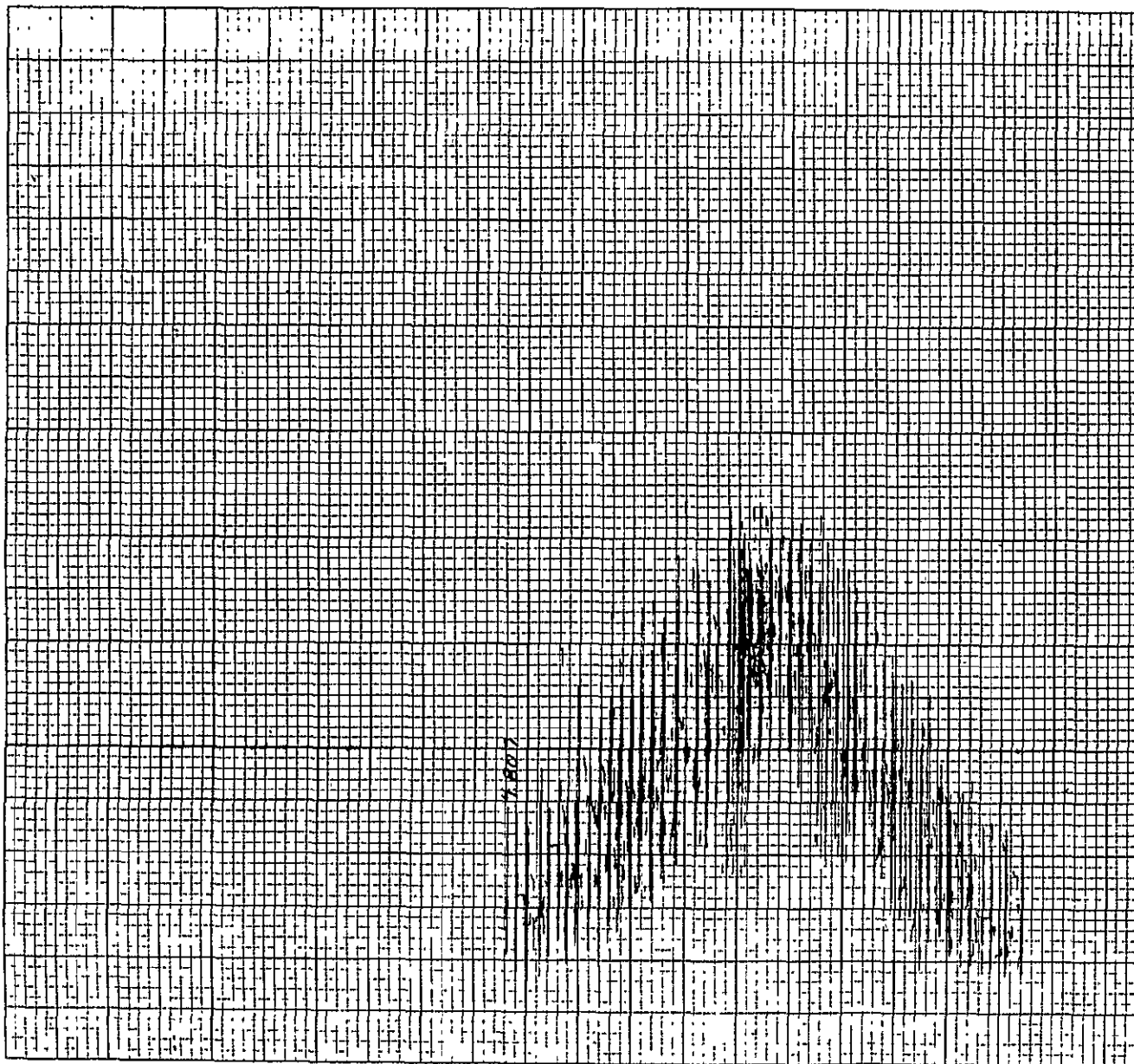


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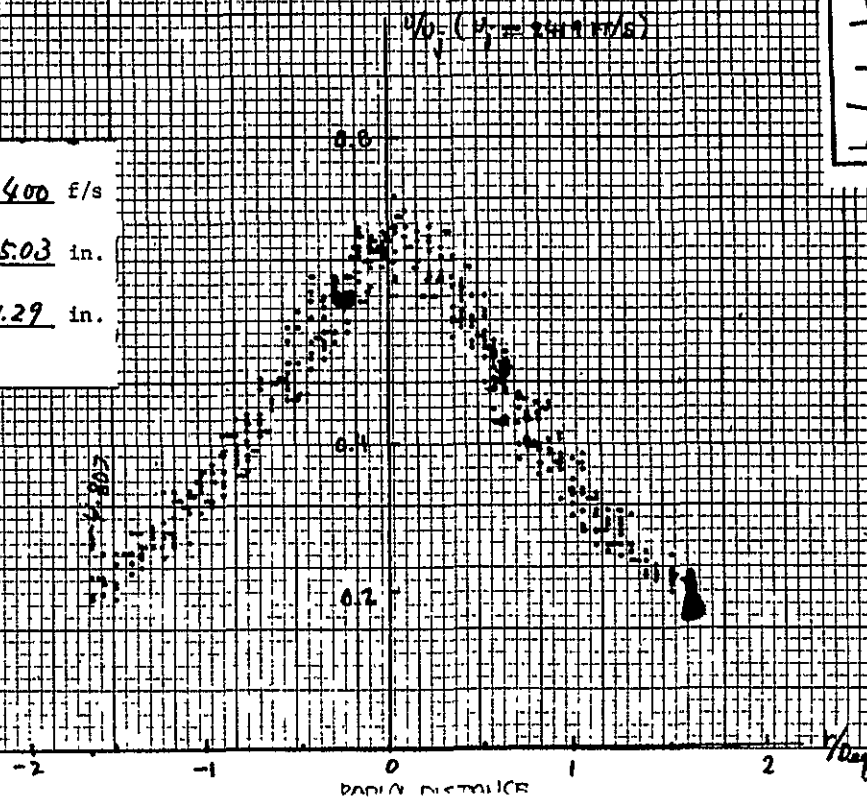
DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 800	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D - 12
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1290

$$P_r = 3.125, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 1729^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 249 \text{ f/s}, h = 1.29 \text{ in.}$$



DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-801	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; H.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS $D_{eq} = 12$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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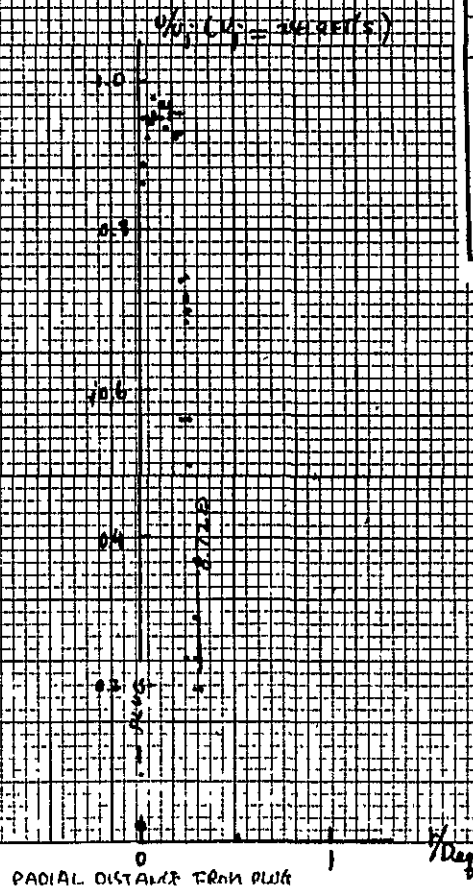
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DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION: G - 802	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1292



DATE: 5/27/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 614

PLOT IDENTIFICATION: G - 803

TRAVERSE DETAILS.

AXIAL	<input type="checkbox"/>	:	ϕ	-	<input type="checkbox"/>	:	OFFSET	-	<input type="checkbox"/>
RADIAL		:	REF. (ϕ)	-		:	VOLTS	)	R
LOCATIONS		:	TRAVERSE	-		:	VOLTS	)	R ₂
RADIAL	<input checked="" type="checkbox"/>	:	E.W.	-	<input checked="" type="checkbox"/>	:	N.S.	-	<input type="checkbox"/>
AXIAL		:	REF. (ϕ)	-		:	VOLTS	)	X
LOCATIONS		:	TRAVERSE	-		:	VOLTS	)	D _{eq}

SCALE: X-AXIS= 3.32 INCH/UNIT
Y-AXIS= 390 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF W TRAVERSE

ϕ

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1293

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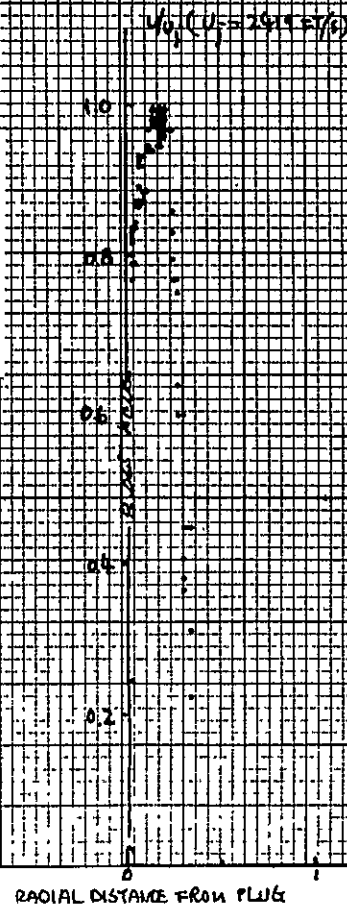
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DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 804	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1294

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$P_r = 3.125$, $v_{a/c} = 400$ f/s
 $T_T = 1729$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2419$ f/s, $h = 1.29$ in.



DATE: = 5/27/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 614

PLOT IDENTIFICATION: G - 805

TRAVERSE DETAILS.

AXIAL	<input type="checkbox"/>	:	Ø - □	:	OFFSET	-	□
RADIAL			REF. (C)	-	VOLTS	R	
LOCATIONS			TRAVERSE	-	VOLTS	R ₂	
RADIAL	<input checked="" type="checkbox"/>	:	E.W. - B	:	N.S.	-	□
AXIAL			REF. ()	-	VOLTS	X	
LOCATIONS			TRAVERSE	-	VOLTS	D	

69

SCALE: X-AXIS= 3.32 INCH/UNIT
Y-AXIS= 390 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE

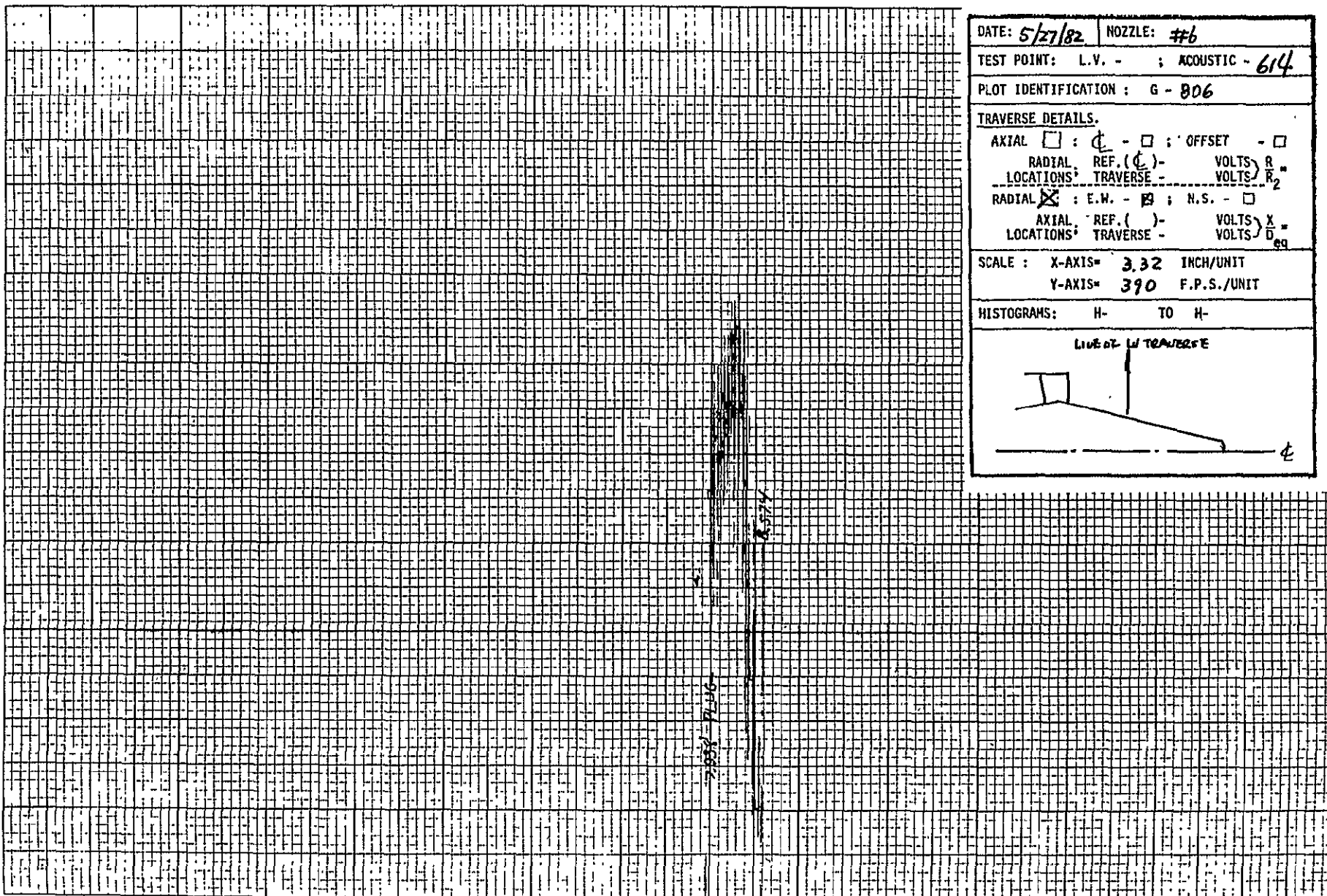
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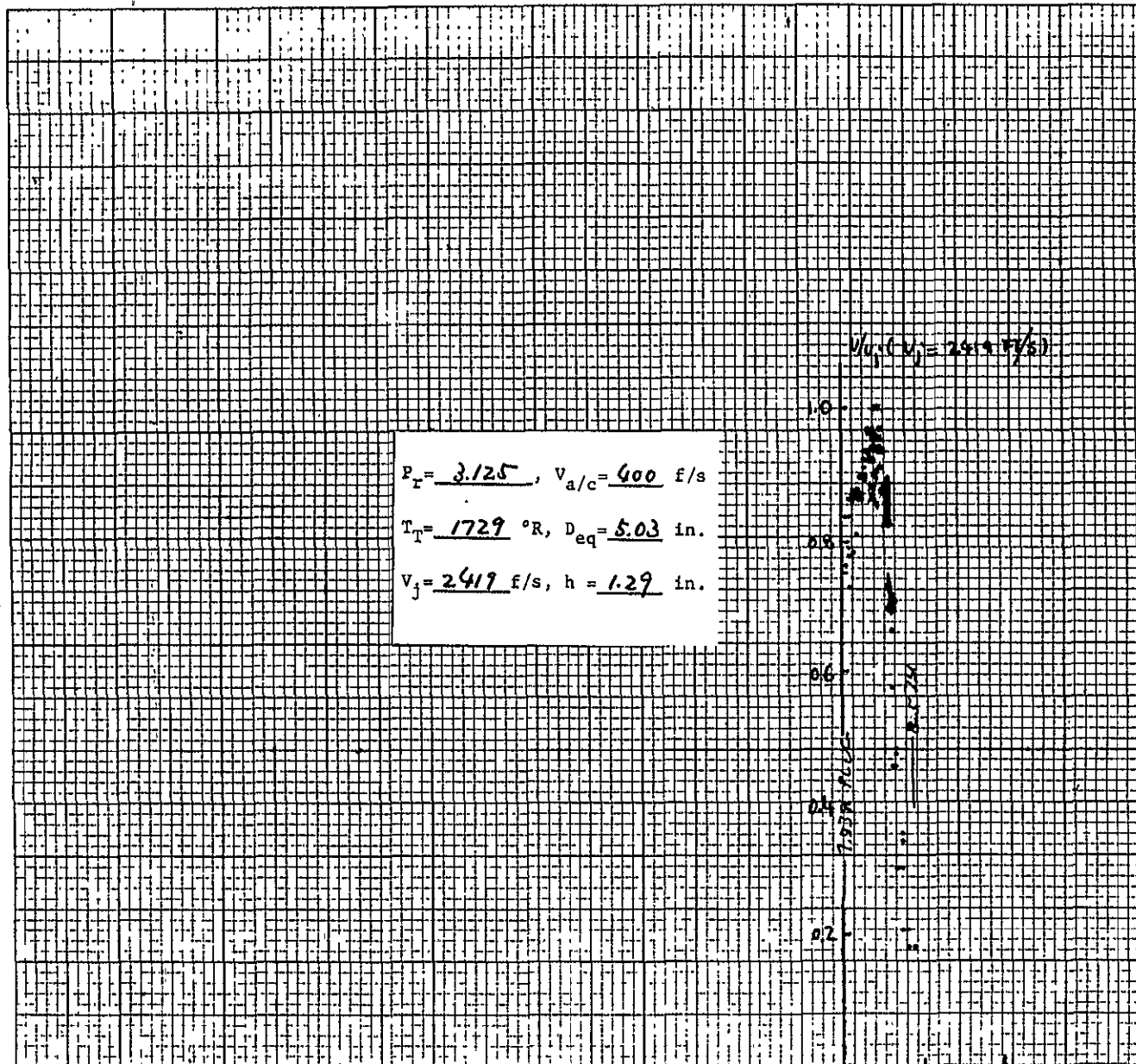


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TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G - 806	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LIVE OF W TRAVERSE</p>	

1296

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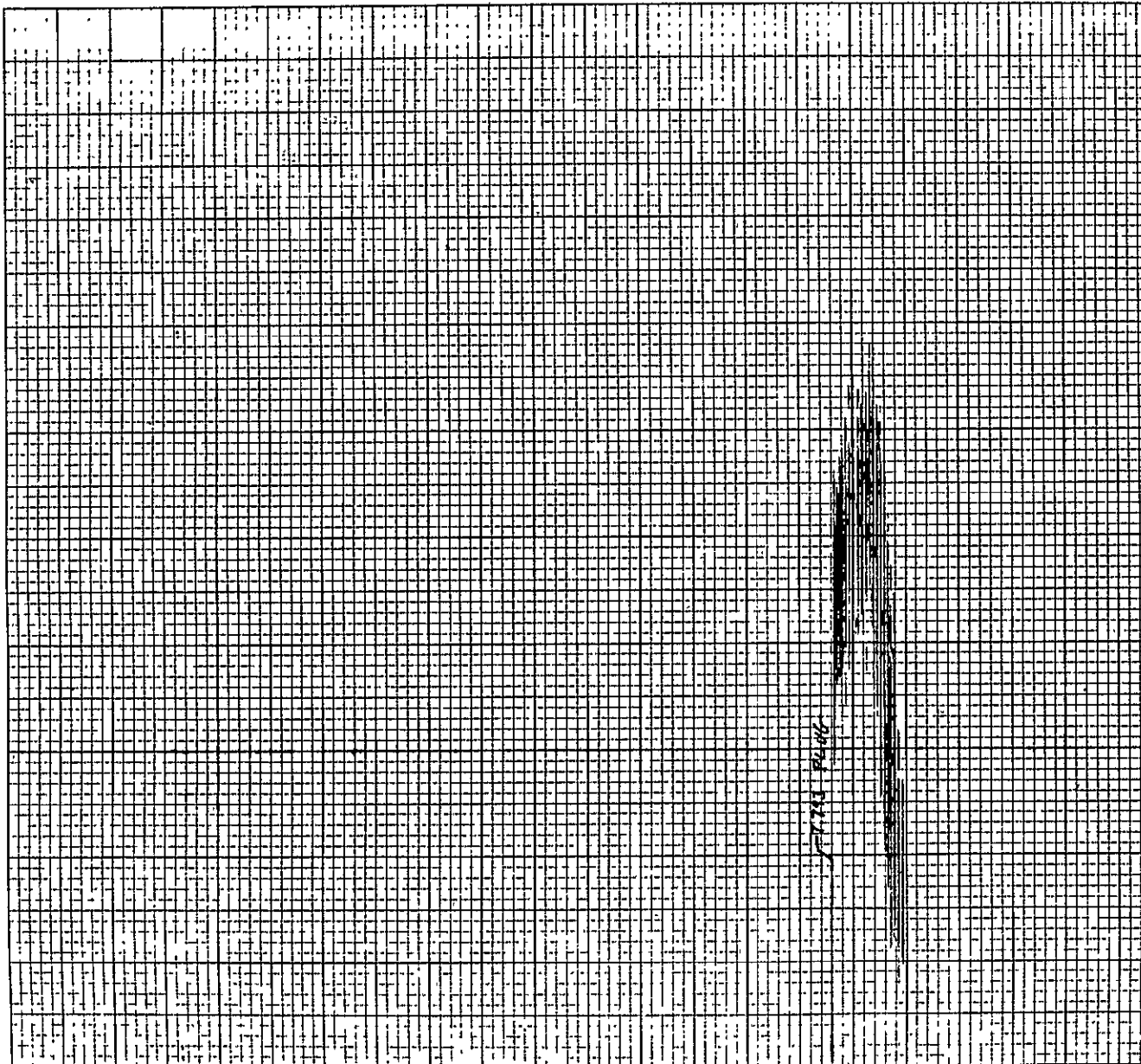
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TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-807	
TRAVERSE DETAILS.	
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RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LV TRAVERSE</p>	

RADIAL DISTANCE FROM PLUG

NO XY 101

1007

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DATE: 5/27/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 614	
PLOT IDENTIFICATION : G - 808	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 332 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LIVE AT W TRAVERSE</p>	

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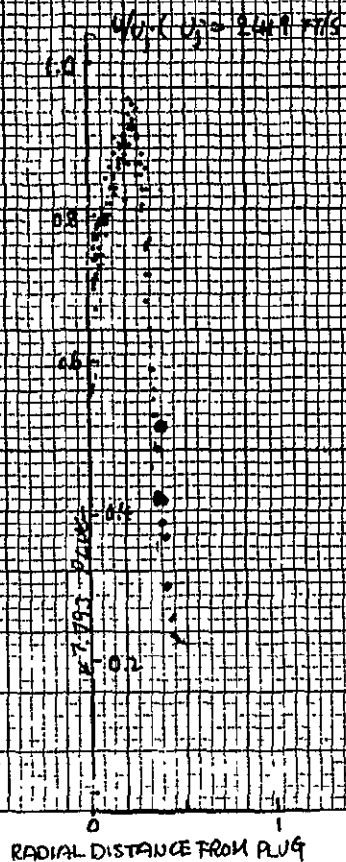
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 $T_T = 1729$ °R, $D_{eq} = 5.03$ in.
 $V_j = 2419$ f/s, $h = 1.29$ in.



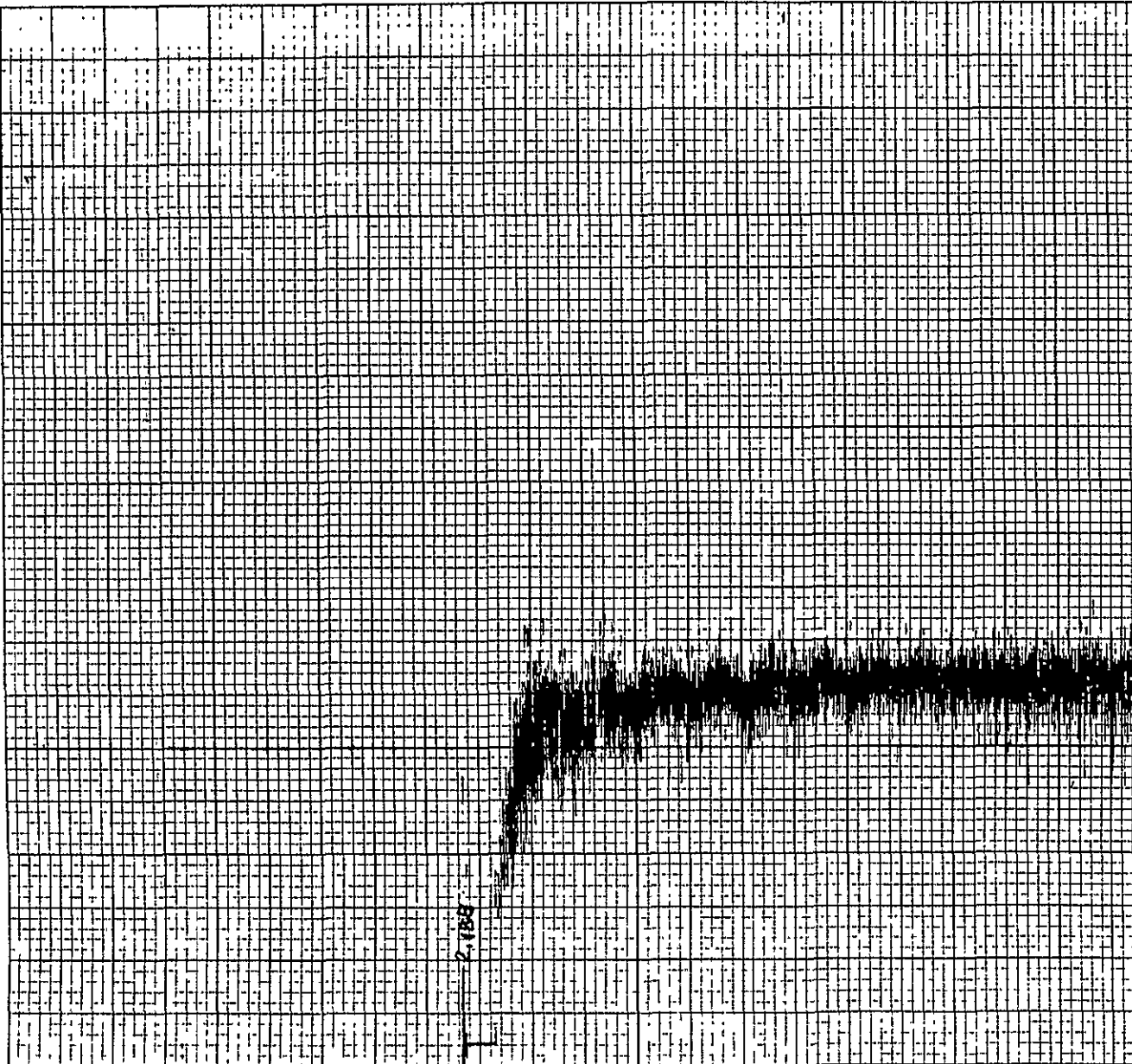
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TEST POINT: L.V. -	ACOUSTIC - 614
PLOT IDENTIFICATION: G-809	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : <input checked="" type="checkbox"/> - <input type="checkbox"/> : OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 390 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1300

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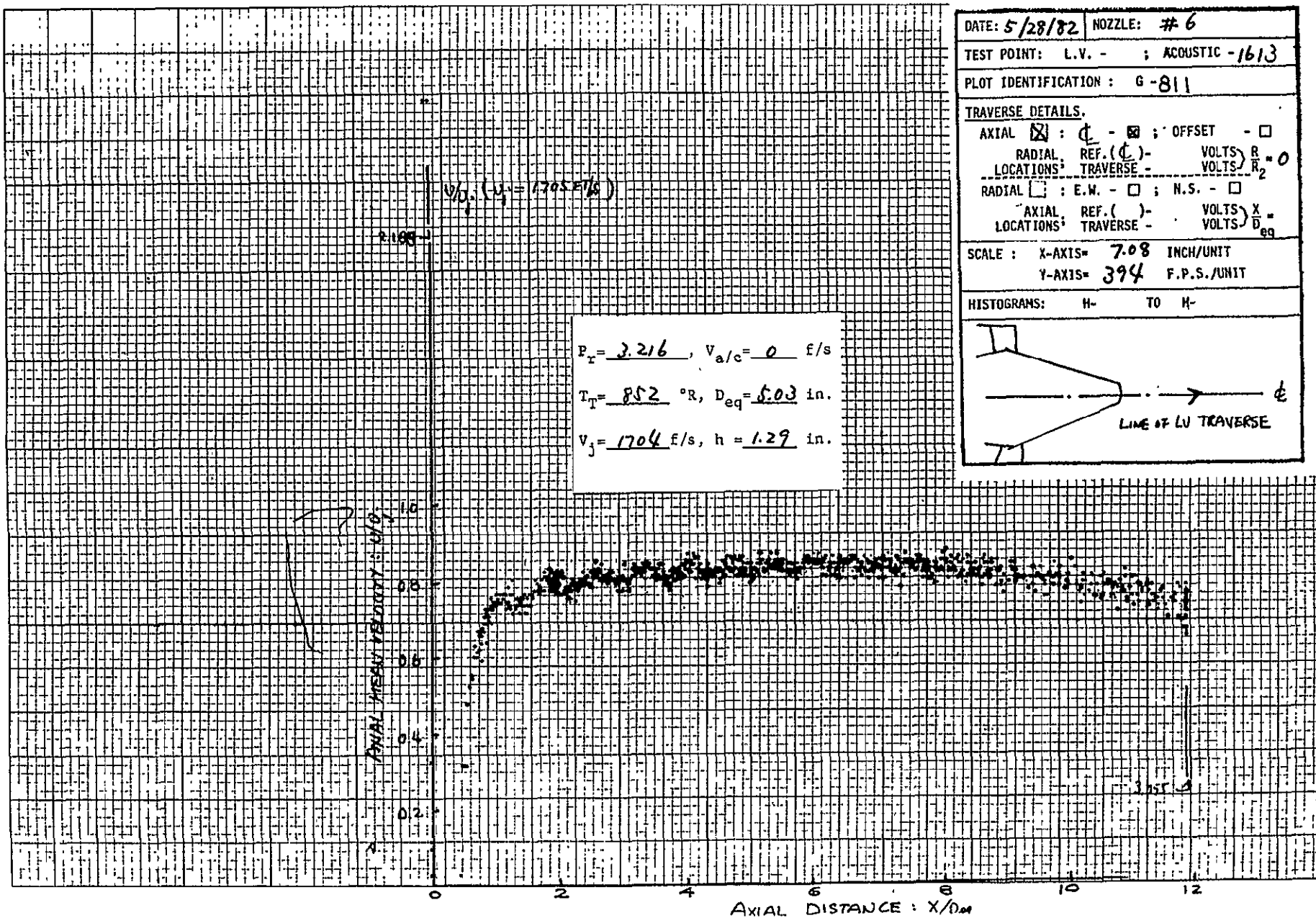
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 810	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - ϕ ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1011 AX 70

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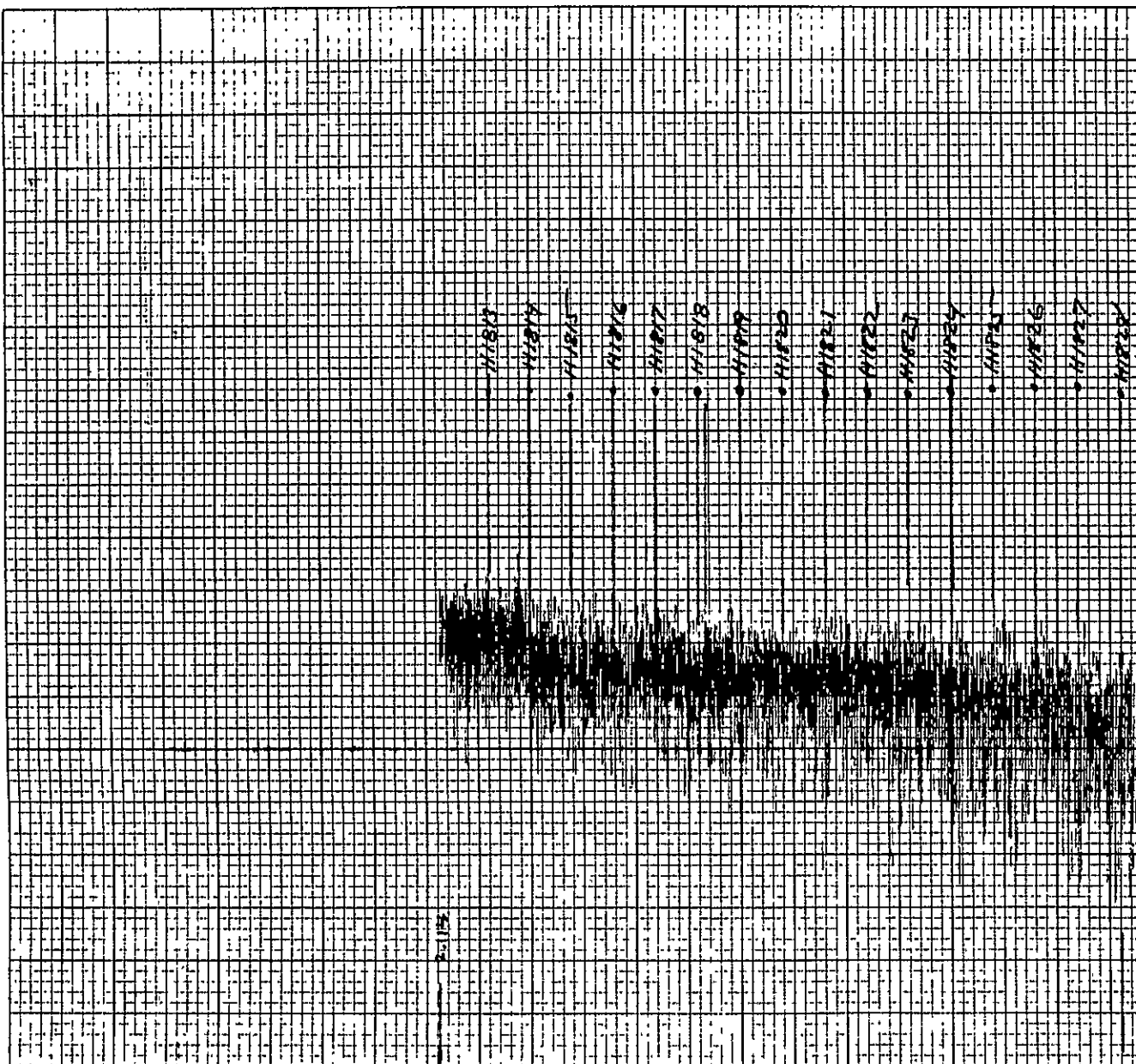


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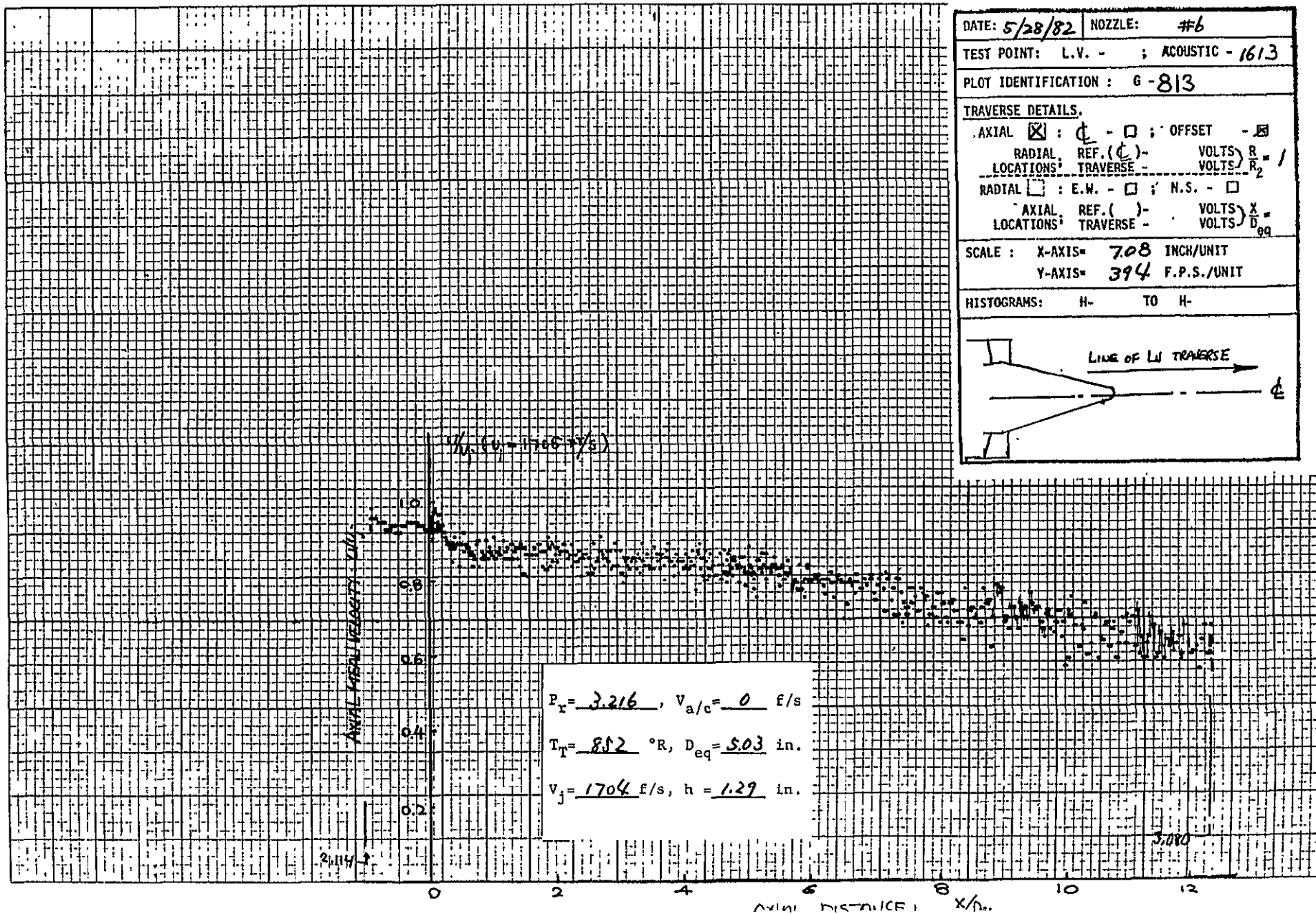
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 812	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2} = 1$
LOCATIONS* TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D} =$
LOCATIONS* TRAVERSE -	VOLTS $\frac{X}{D}$
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1813 TO H-1832	

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1011 AX 00

1303

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DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G-813	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input checked="" type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{R}{R_2}$	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{eq}}$	
LOCATIONS: TRAVERSE - VOLTS $\frac{X}{D_{eq}}$	
SCALE : X-AXIS= 708 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LI TRAVERSE</p>	

NO. 1011 AX

1304

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RESEARCH AND DEVELOPMENT
COMMITTEE
AERONAUTICAL DIVISION
WRIGHT-PATTERSON AIR FORCE BASE
DAYTON, OHIO 45433-6151

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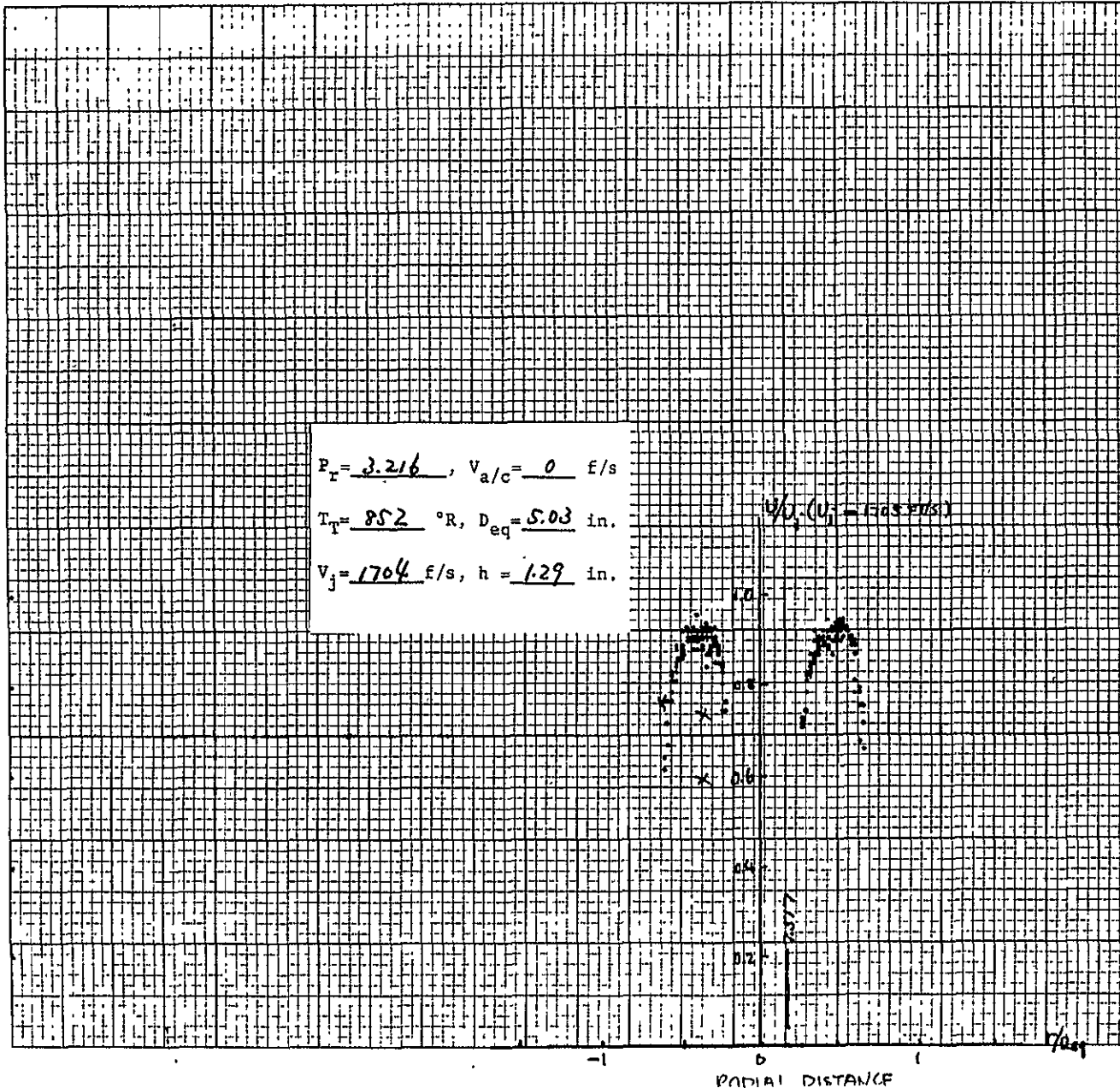
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-814	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ;	OFFSET - <input type="checkbox"/>
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ;	N.S. - <input type="checkbox"/>
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1305

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GRAPHIC CONTROLS CORPORATION



$$P_r = 3.216, \quad v_{a/c} = 0 \text{ F/S}$$

$$T_r = 852 \text{ } ^\circ\text{R}, \quad D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1704 \text{ F/S}, \quad h = 1.29 \text{ in.}$$

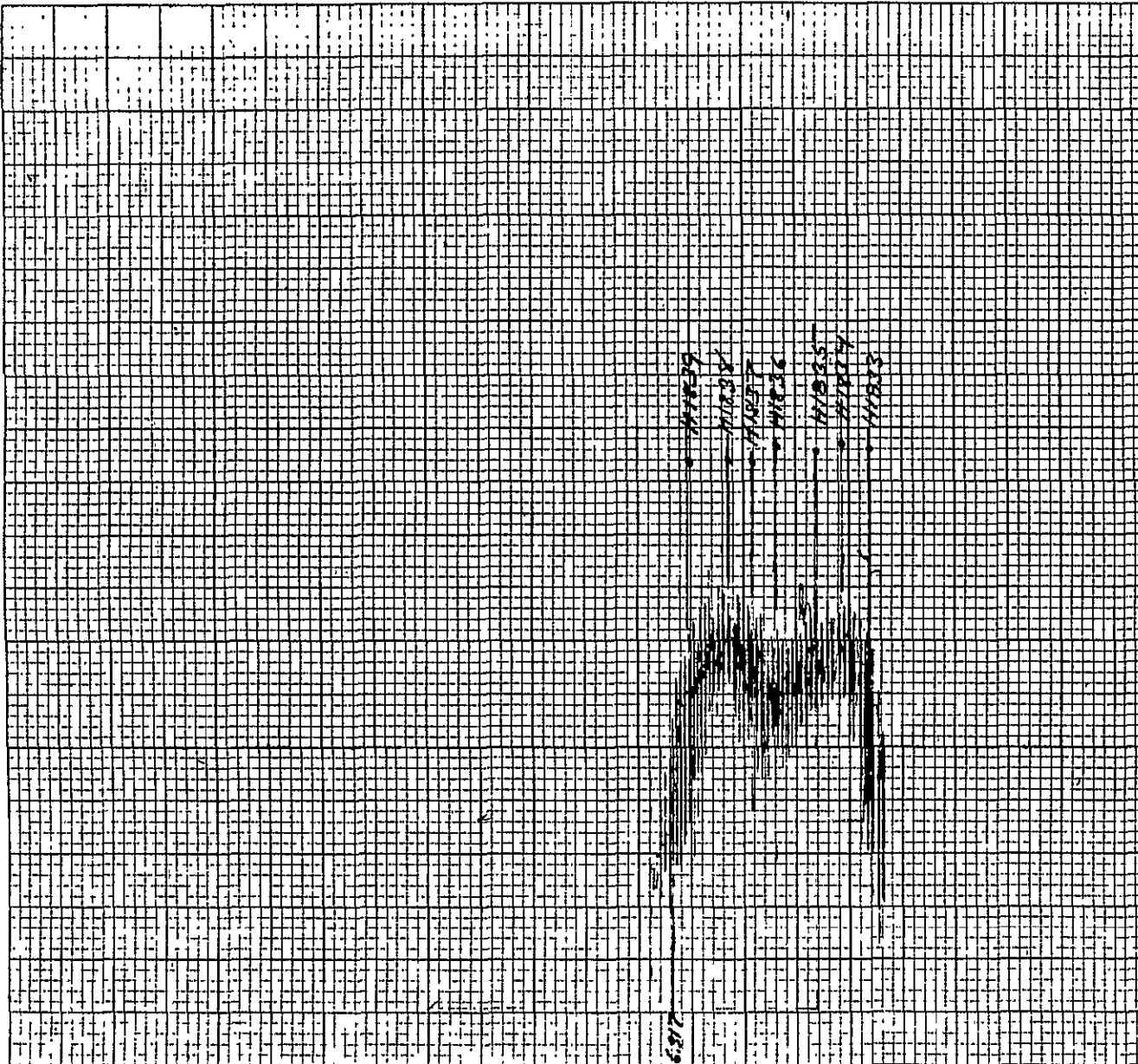
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G-815	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL, REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS, TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL, REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS, TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1011 AX

1306

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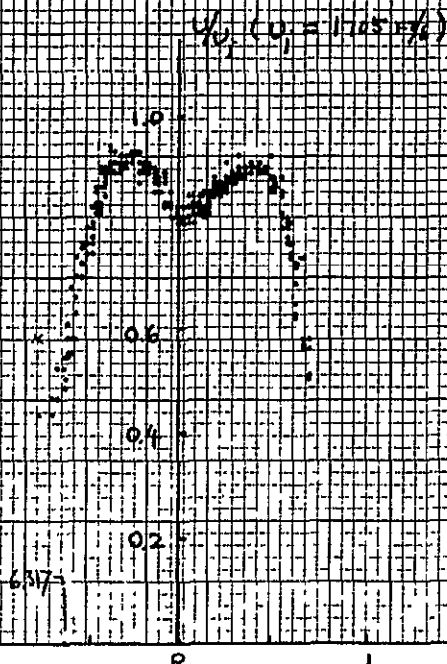


DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 816	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $X = 2$	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1833 TO H-1839	

$P_r = 3.216$, $V_{a/c} = 0$ f/s

$T_T = 852$ °R, $D_{eq} = 5.03$ in.

$V_j = 1704$ f/s, $h = 1.29$ in.



DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-817	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. ϕ -	VOLTS X = 2
LOCATIONS: TRAVERSE -	VOLTS Y = 2
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1833 TO H-1839	

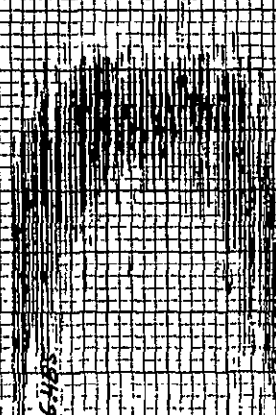
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1308

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DATE: 5/28/62	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-818	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X = 6$
LOCATIONS: TRAVERSE -	VOLTS D_{89}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



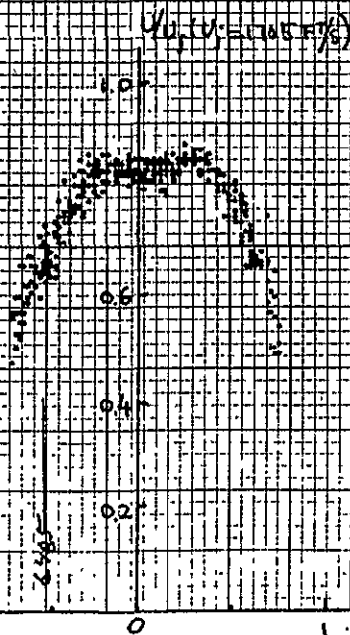
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1303

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$P_x = 3.216$, $v_{a/c} = 0$ f/s
 $T_T = 852$ °R, $D_{eq} = 5.03$ in.
 $v_j = 1704$ f/s, $h = 1.29$ in.



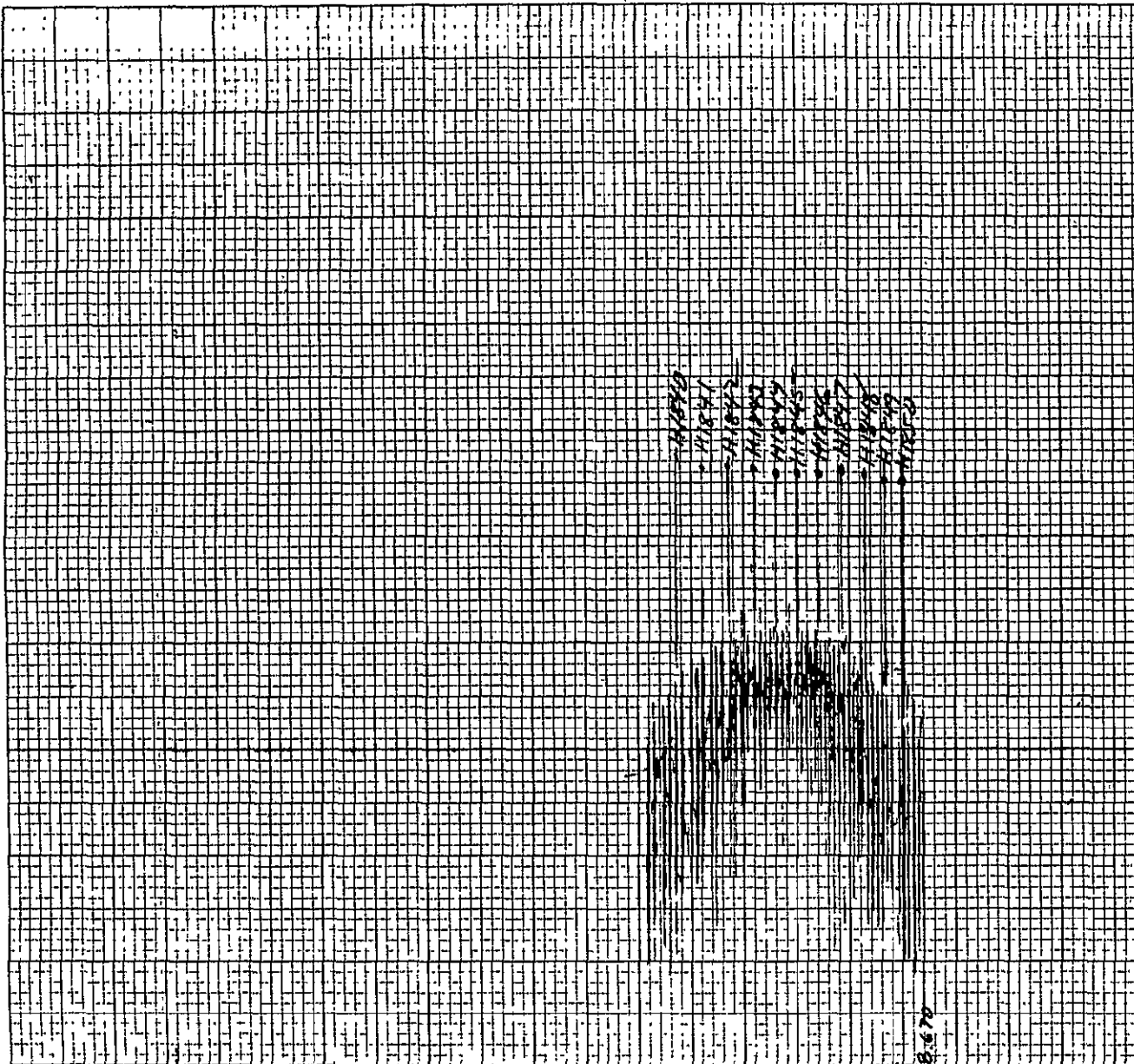
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-819	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	$X = 6$
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

NO. XY 1101

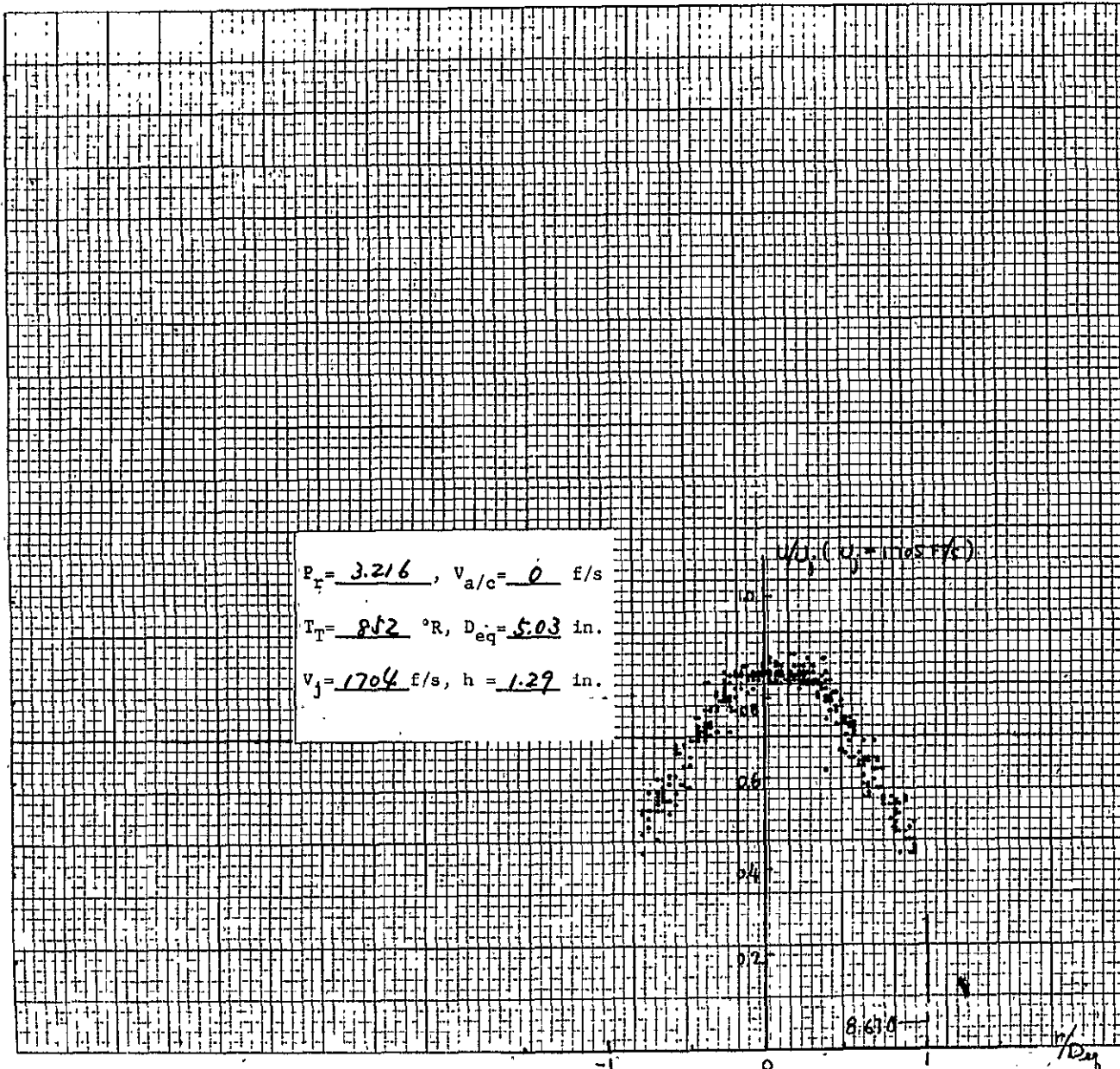
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DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-820	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $X = 8$
LOCATIONS: TRAVERSE -	VOLTS $Y = 8$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1840 TO H-1850	



$$P_r = 3.216, V_{a/c} = 0 \text{ f/s}$$

$$T_T = 852 \text{ } ^\circ\text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1704 \text{ f/s}, h = 1.29 \text{ in.}$$

DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G-821	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	$D_{eq} = 8$
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 5/28/62	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC -1613	
PLOT IDENTIFICATION: G-824	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D	
SCALE : X-AXIS= 332 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

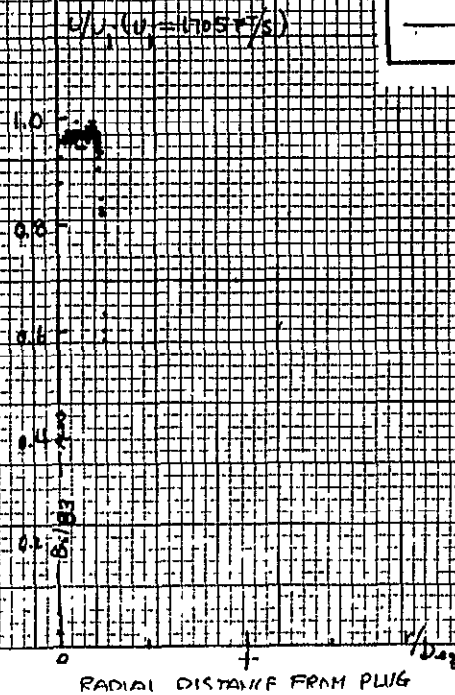
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$P_r = 3.216$, $V_{a/c} = 0$ f/s
 $T_r = 852$ °R, $D_{eq} = 5.03$ in.
 $V_j = 1704$ f/s, $h = 1.29$ in.



DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 825	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1316

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DATE: 5/28/82	NOZZLE: # 6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 826	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

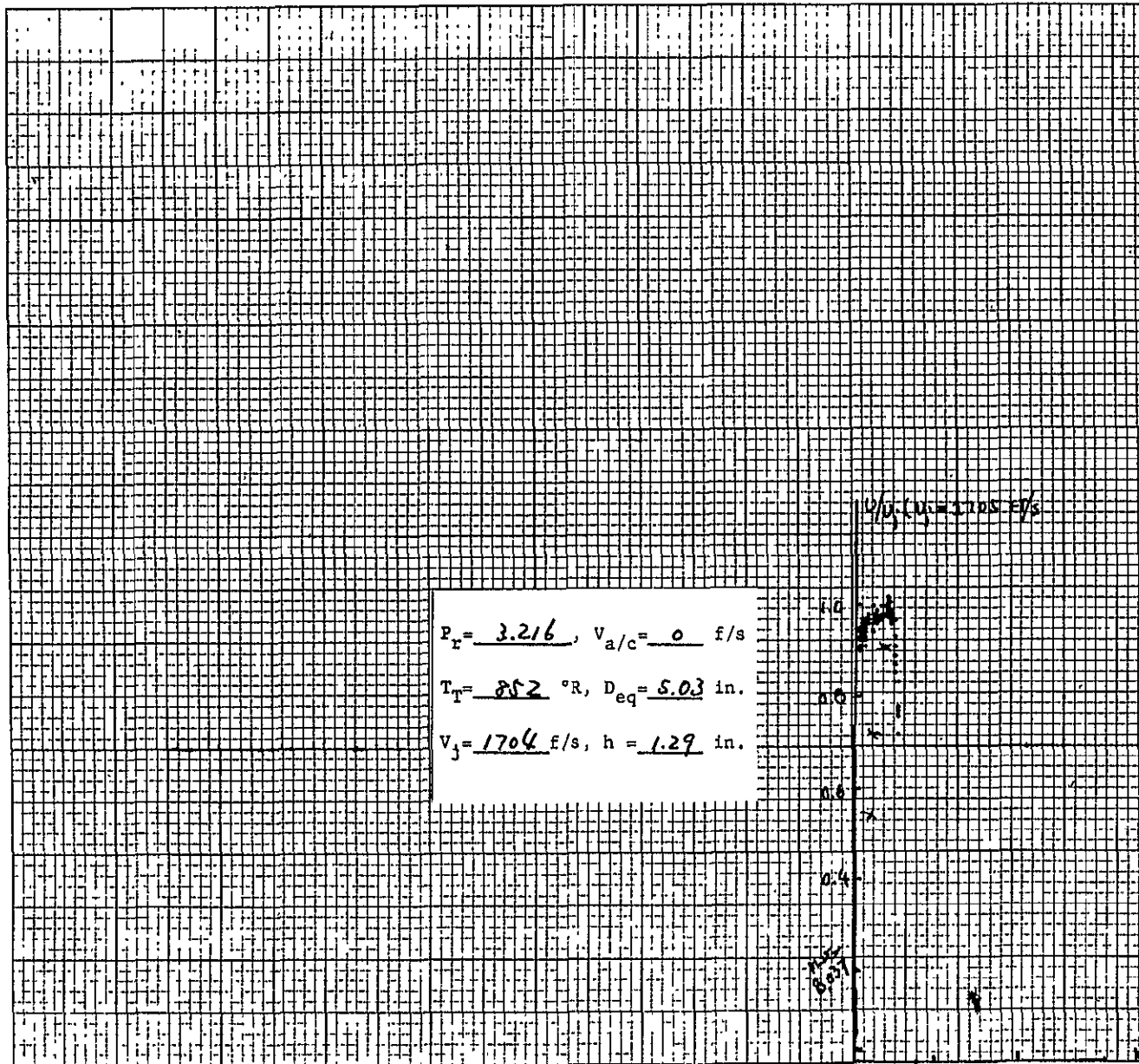
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NO. XX

1317

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DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G-827	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS = 3.32 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1318

DATE: 5/28/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC -1613

PLOT IDENTIFICATION : G - 828

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. () - VOLTS X

LOCATIONS TRAVERSE - VOLTS D_{99}

SCALE : X-AXIS= 3.32 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF LI TRAVERSE

G

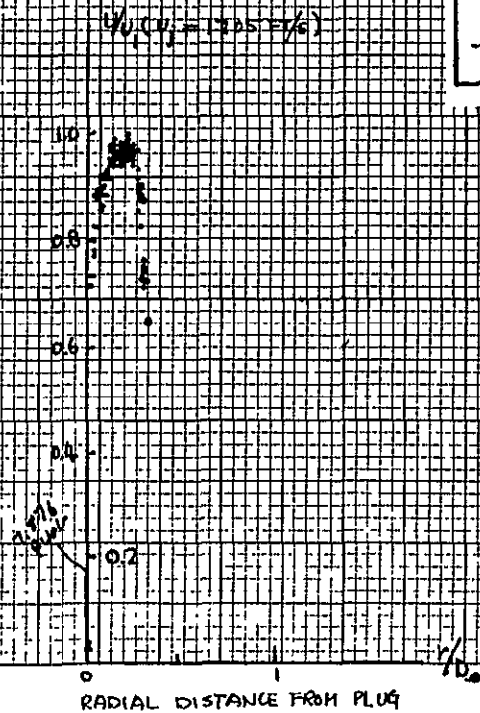
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$P_r = 3.216$, $V_{a/c} = 0$ f/s
 $T_1 = 852$ °R, $D_{eq} = 5.03$ in.
 $V_j = 1704$ f/s, $h = 1.29$ in.



DATE: 5/28/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1613

PLOT IDENTIFICATION: G-829

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

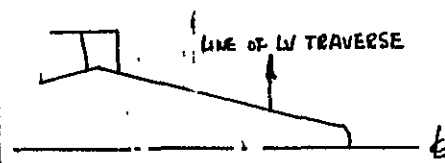
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 332 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-



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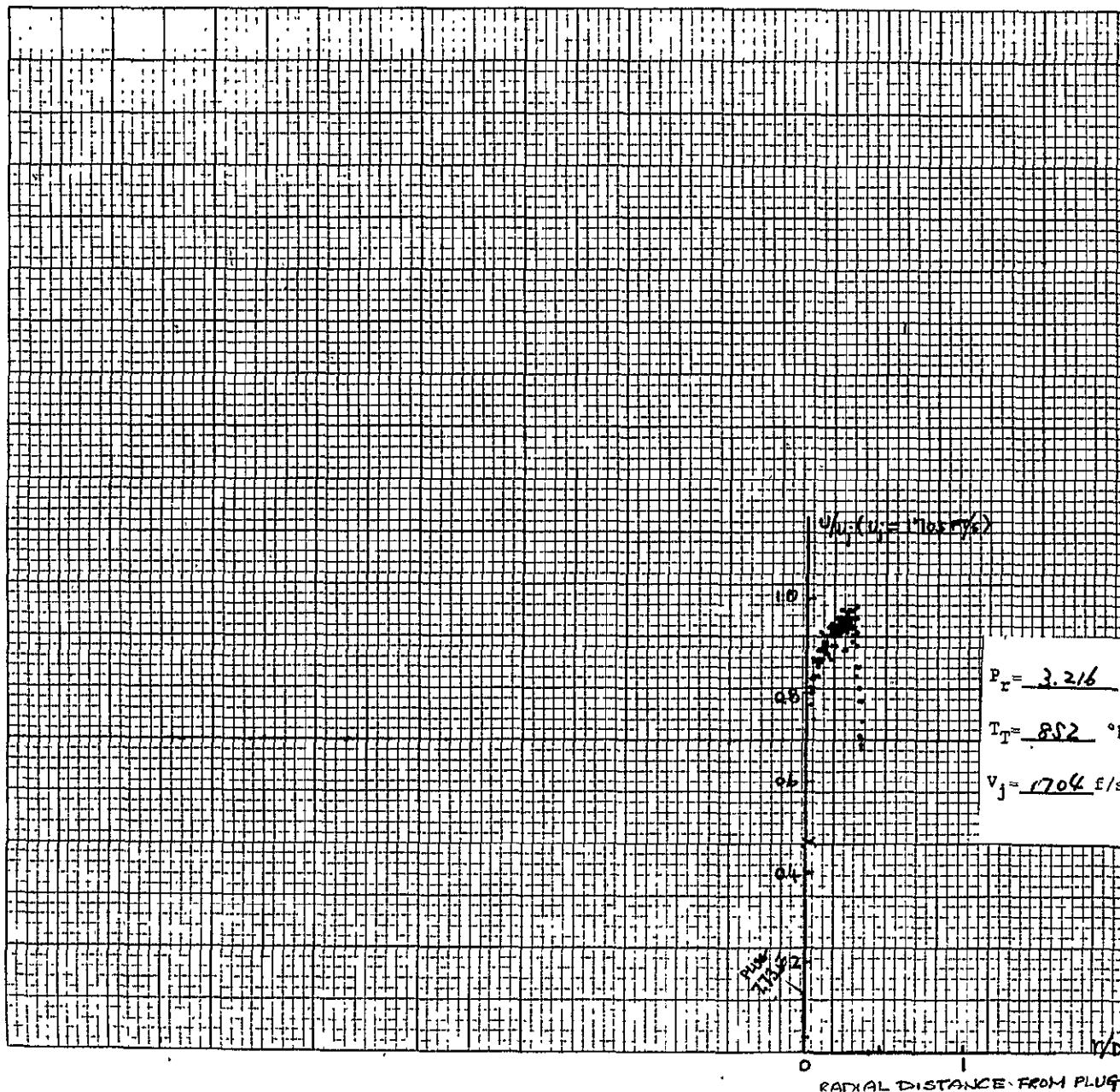
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 830	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS Y
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF W TRAVERSE</p>	

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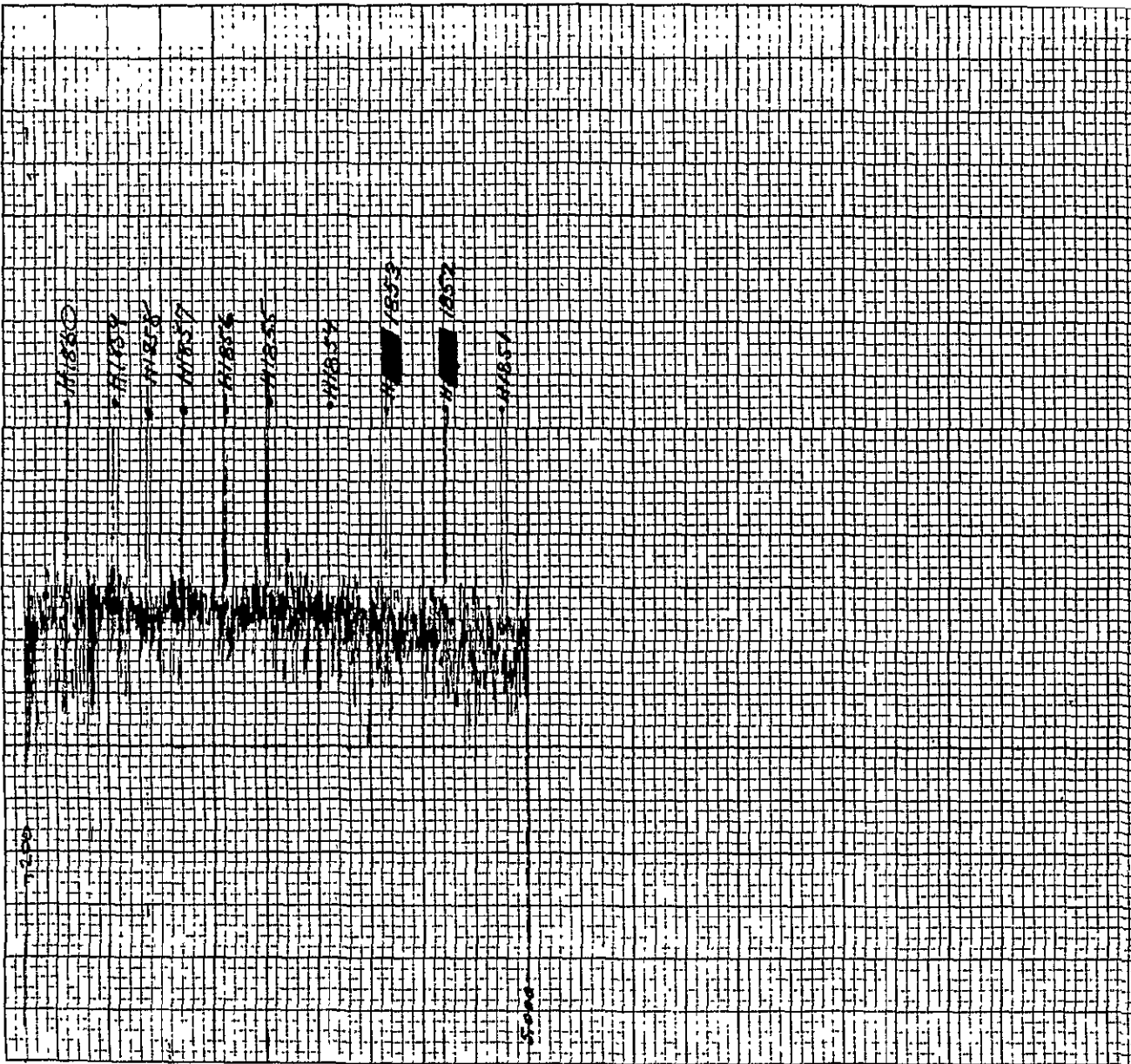


$$P_r = 3.216, V_{a/c} = 0 \text{ f/s}$$

$$T_T = 852^\circ \text{R}, D_{eq} = 5.00 \text{ in.}$$

$$V_j = 1704 \text{ f/s}, h = 1.29 \text{ in.}$$

DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC -1613	
PLOT IDENTIFICATION: G-831	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 332 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

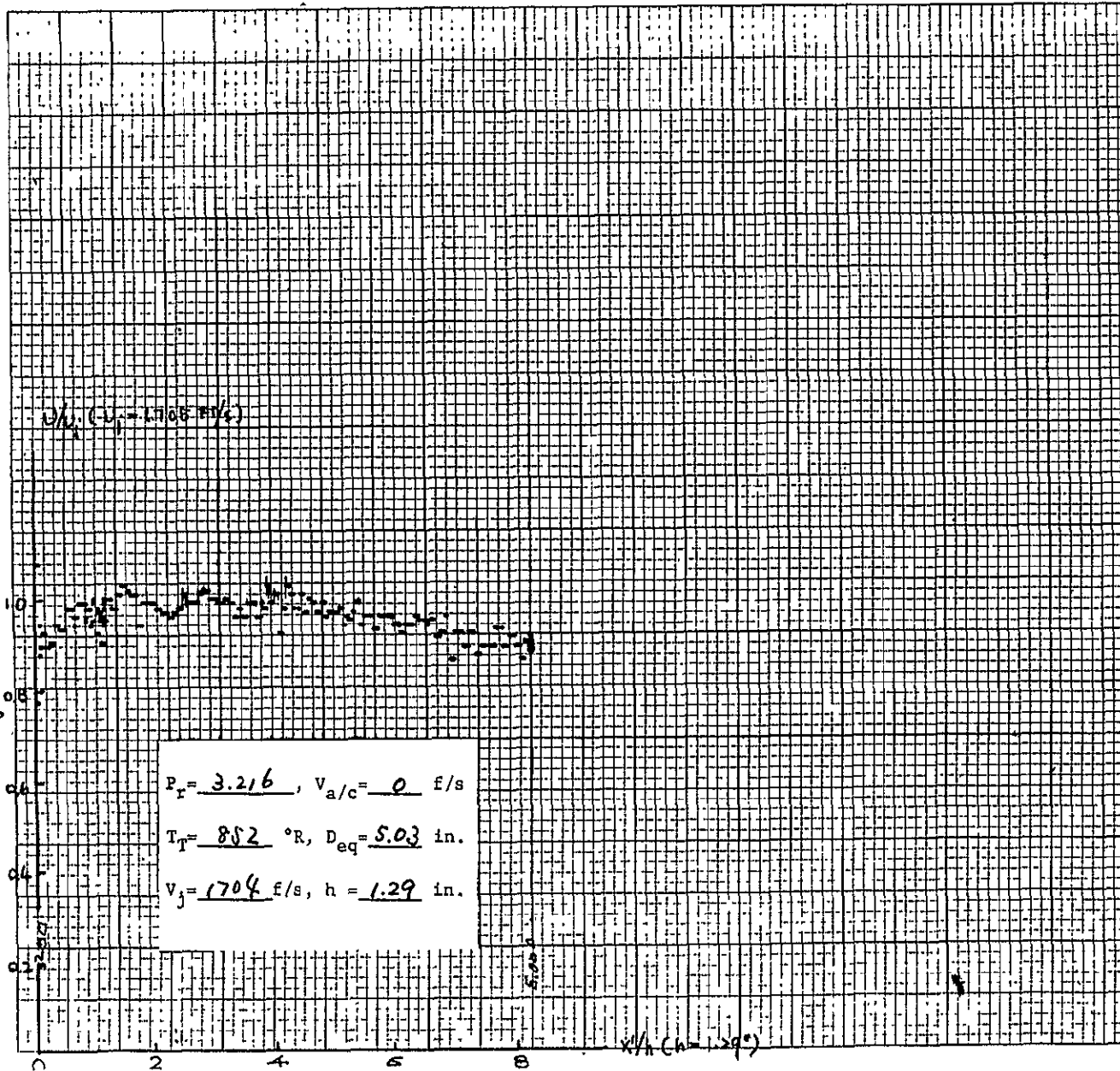


DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G - 832	
TRAVERSE DETAILS.	
AXIAL [S] : C - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (C) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{99}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1851 TO H-1860	

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$P_r = 3.216$, $V_{a/c} = 0$ f/s
 $T_T = 852$ °R, $D_{eq} = 5.03$ in.
 $V_j = 1704$ f/s, $h = 1.29$ in.

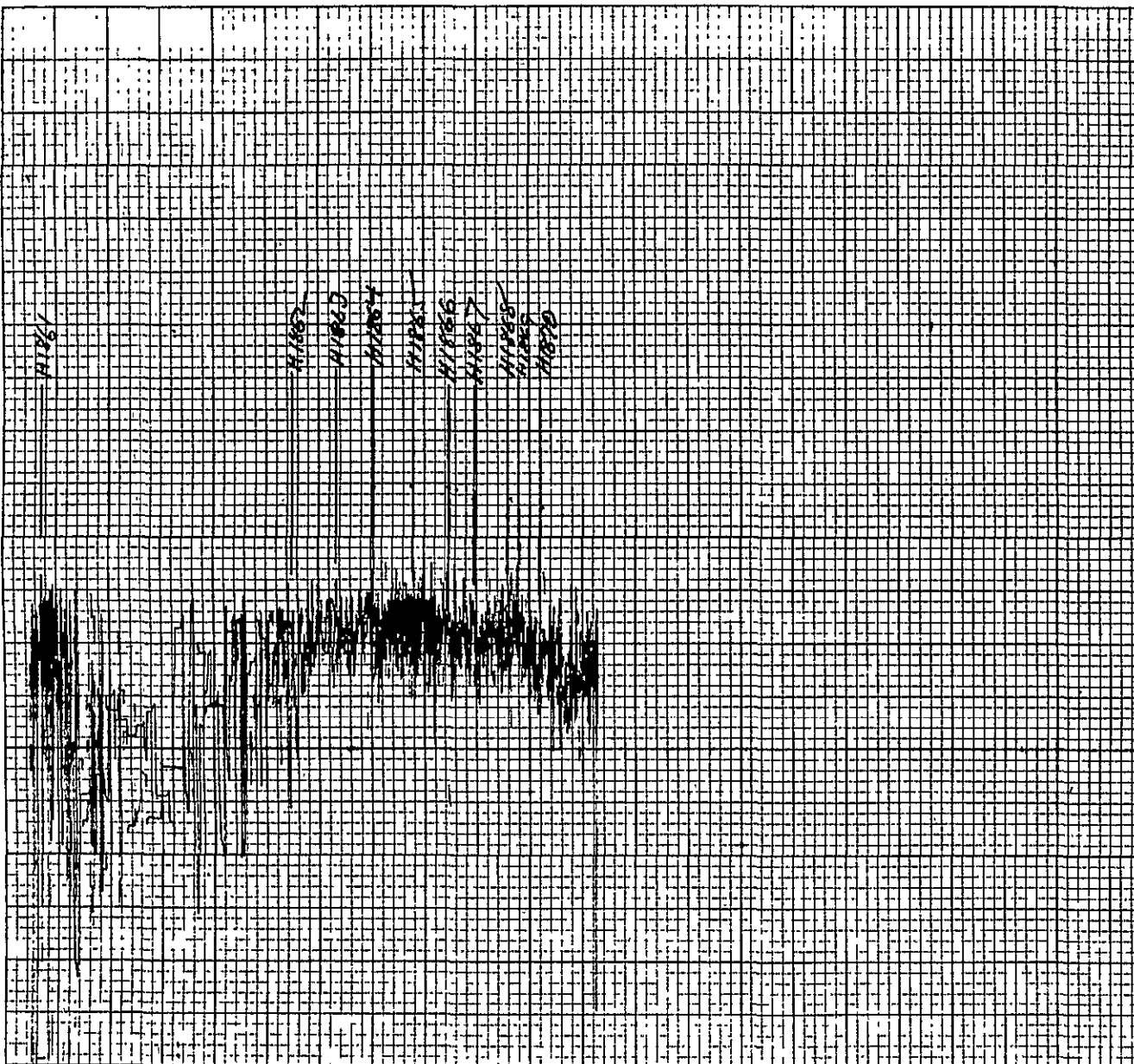
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-833	
TRAVERSE DETAILS.	
AXIAL [S]: ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL \square : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS $\frac{X}{D_{99}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{99}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G - 834	
TRAVERSE DETAILS.	
AXIAL [5] : ϕ - \square ; OFFSET - \square	
RADIAL REF. (C) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL \square : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS $\frac{X}{D_{99}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{99}}$
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H-1862 TO H-1870	

NO. XY 1101

1325

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AXIAL MEAN VELOCITY: 0.6



$V_j/V_0 = 1705 \text{ ft/s}$



$P_r = 3.216$, $V_{a/c} = 0$ f/s

$T_T = 852$ °R, $D_{eq} = 5.03$ in.

$V_j = 1704$ f/s, $h = 1.29$ in.

X/h (in = 1.29")

DATE: 5/28/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1613

PLOT IDENTIFICATION: G-835

TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (C) - VOLTS R_1

LOCATIONS: TRAVERSE - VOLTS R_2

RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

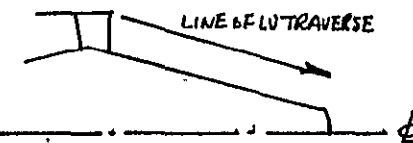
AXIAL REF. () - VOLTS X

LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 394 F.P.S./UNIT

HISTOGRAMS: H-1862 TO H-1870

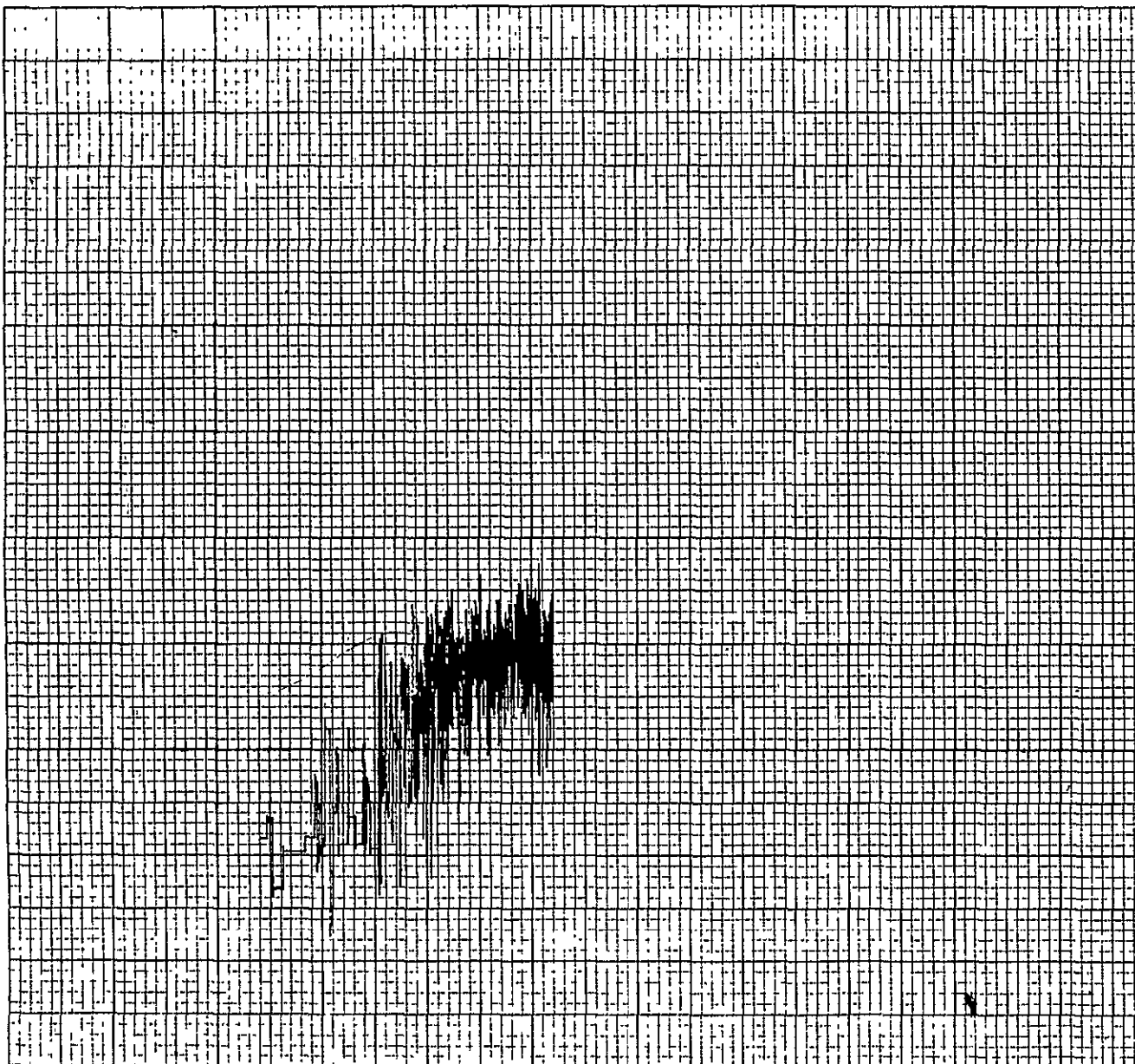


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1326



DATE: 5/28/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1613

PLOT IDENTIFICATION: G - 836

TRAVERSE DETAILS.

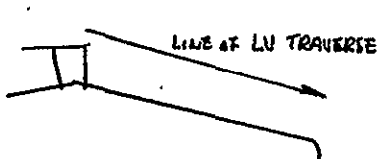
AXIAL	51	⊕ - □	OFFSET	- □
RADIAL	REF. (⊕)		VOLTS) R	
LOCATIONS	TRAVERSE		VOLTS) R	2

RADIAL	□	E.W. - □	N.S. - □	
AXIAL	REF. ()		VOLTS) X	
LOCATIONS	TRAVERSE		VOLTS) D	99

SCALE: X-AXIS = 2.22 INCH/UNIT
Y-AXIS = 394 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE

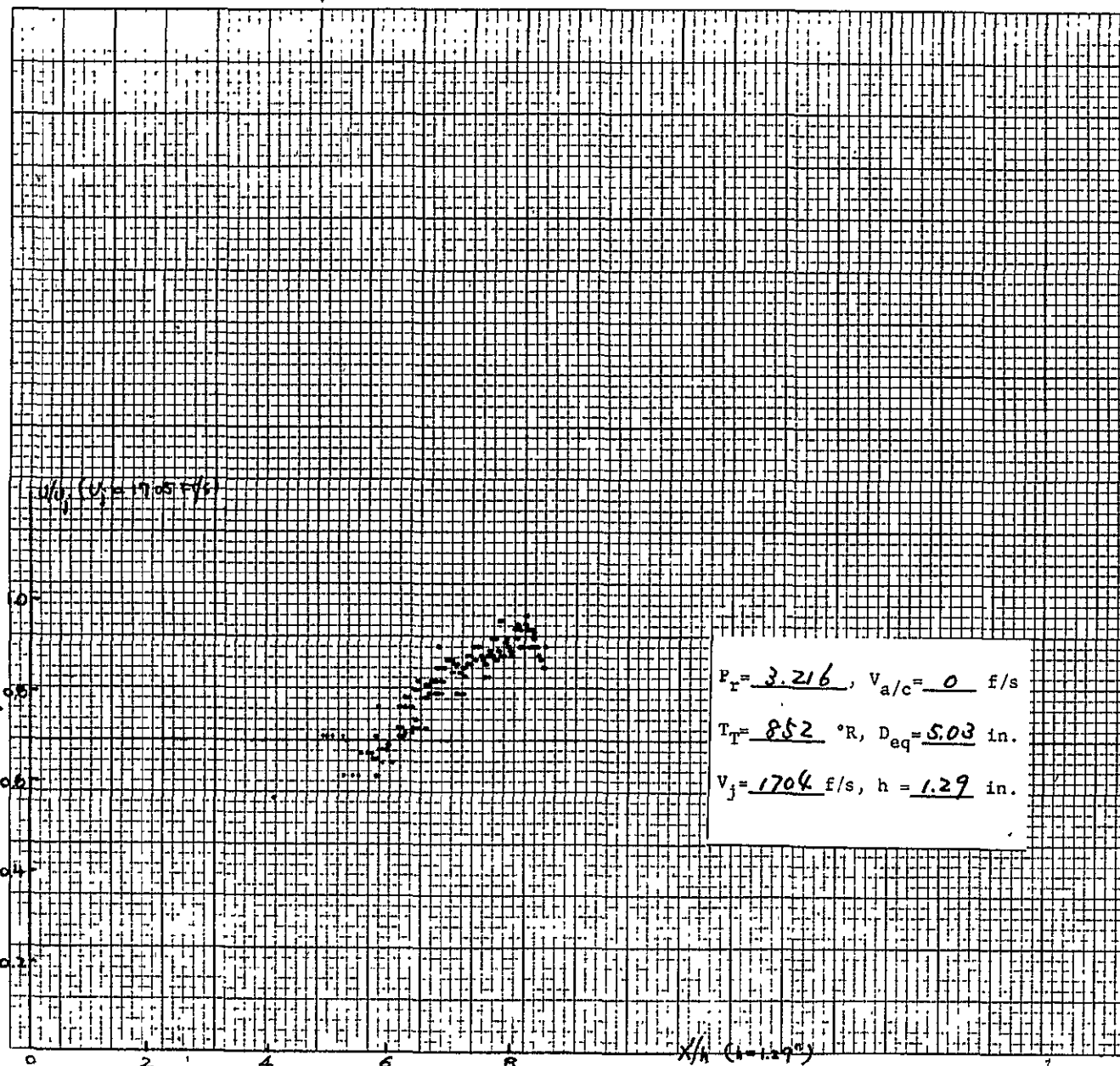


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1011 AX 704

1327
RECORDED CHART
CHART NO. 1011 AX 704
PRINTED IN U.S.A.

AXIAL HEAD VELOCITY: v_j



$$P_r = 3.216, V_{a/c} = 0 \text{ f/s}$$

$$T_r = 852^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1704 \text{ f/s}, h = 1.29 \text{ in.}$$

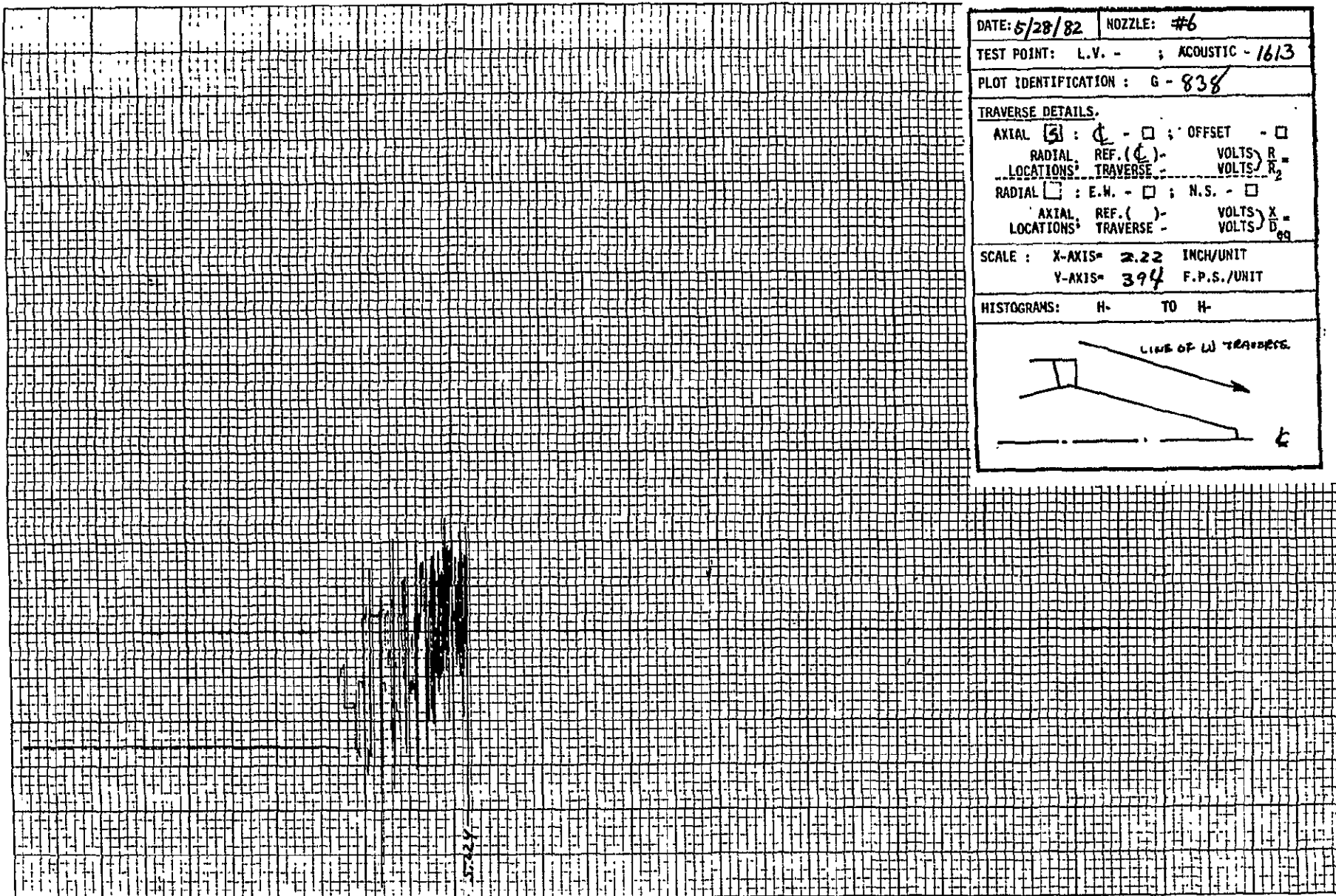
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-837	
TRAVERSE DETAILS.	
AXIAL [S]: ϕ - <input type="checkbox"/> : OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL [] : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{99}
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

ORIGINAL PAGE 19
IF POOR QUALITY

1011 AX NO

1328

VA-11A
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10000 WILSON AVENUE
BETHESDA, MARYLAND 20814



DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G - 838	
TRAVERSE DETAILS.	
AXIAL [5] : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL \square : E.W. - \square ; N.S. - \square	
AXIAL REF. (ϕ) -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{99}
SCALE : X-AXIS = 2.22 INCH/UNIT	
Y-AXIS = 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

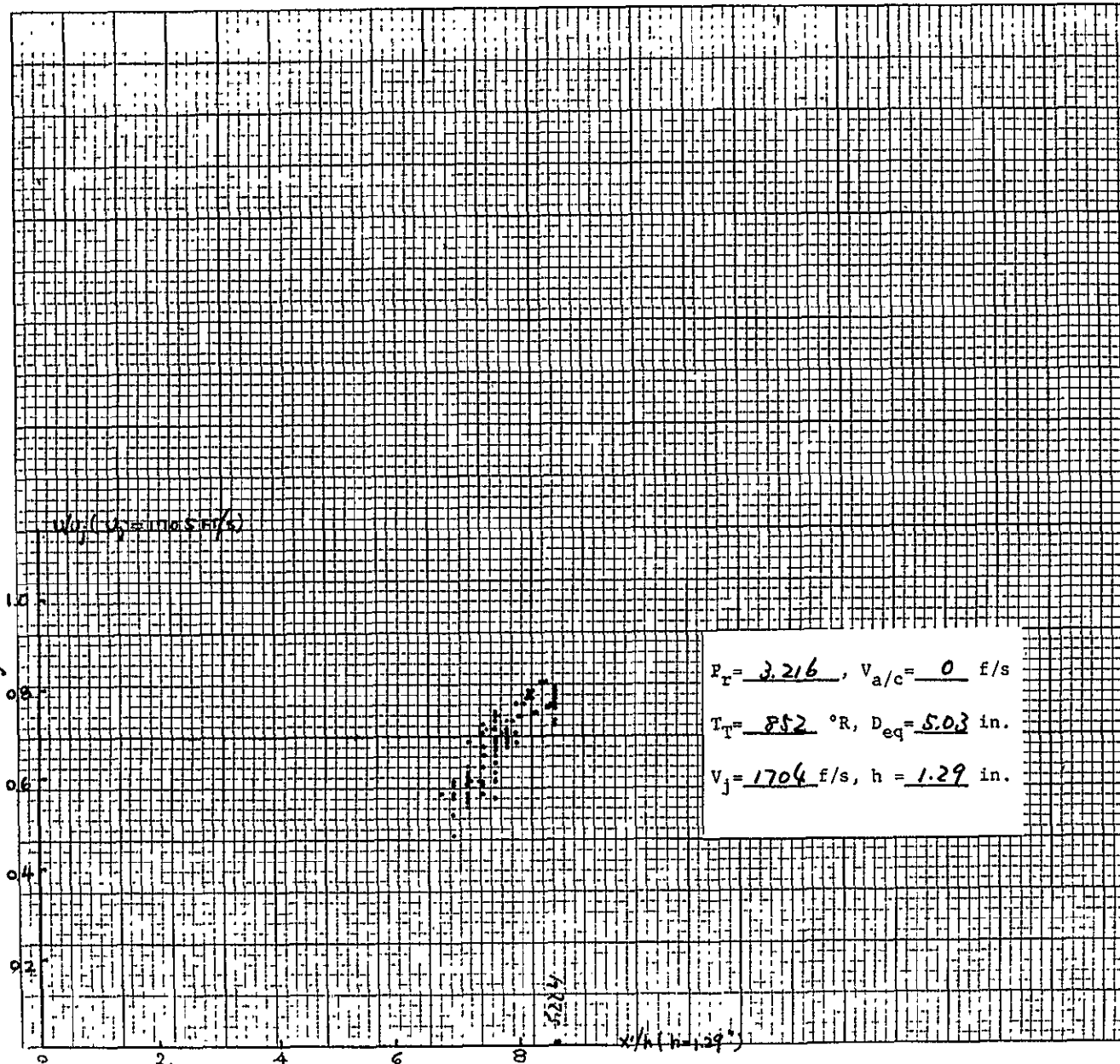
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1011 AX ON

1329

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ELECTRIC ENGINEERING

AXIAL FLOW VELOCITY: U_j



$$P_r = 3.216, V_{a/c} = 0 \text{ f/s}$$

$$T_T = 852^\circ R, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1704 \text{ f/s, } h = 1.29 \text{ in.}$$

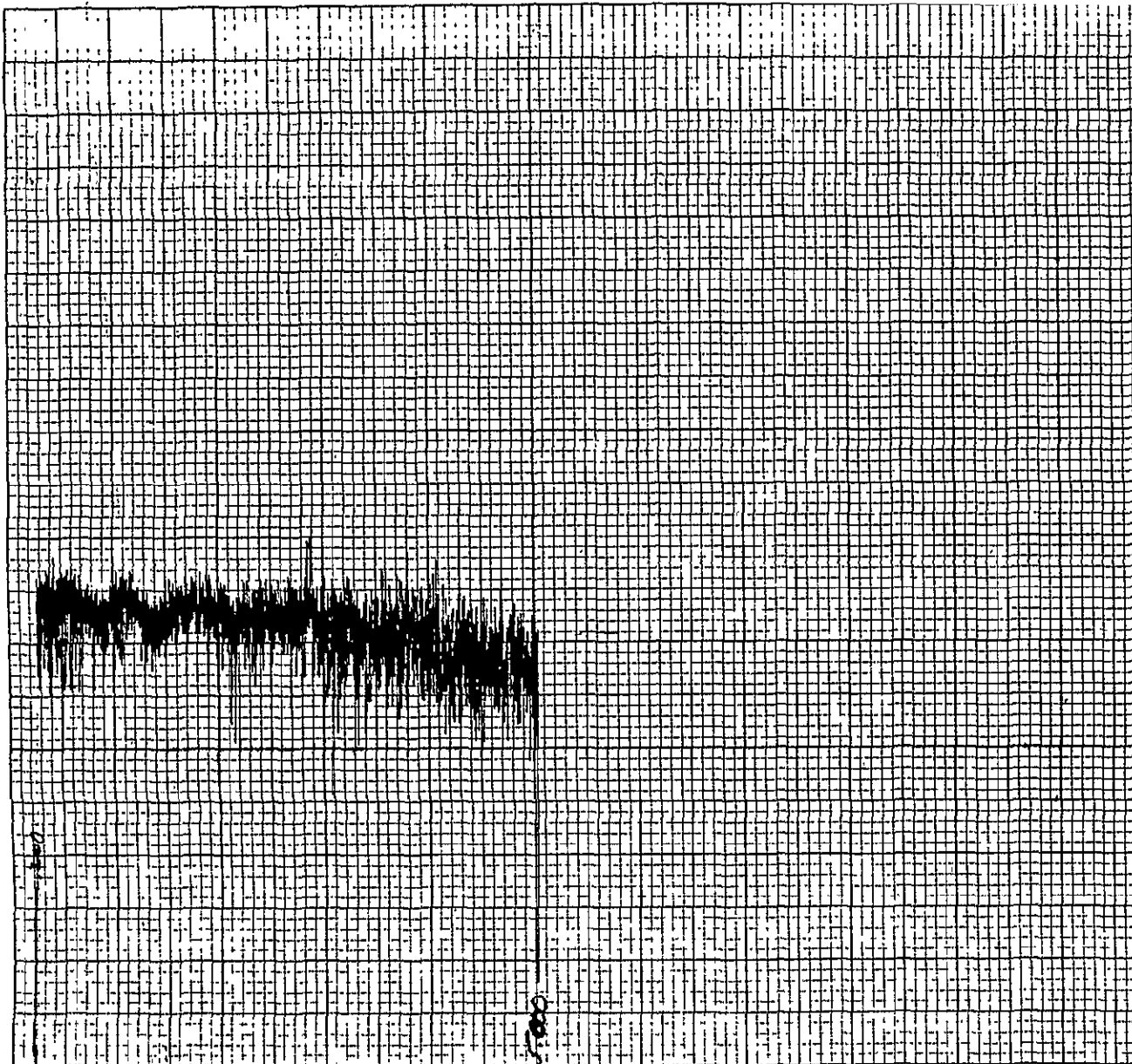
DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1613	
PLOT IDENTIFICATION: G-839	
TRAVERSE DETAILS.	
AXIAL [5]: ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL []: E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE: X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1011 AX CM

1330

1011 AX CM
1330
ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY



DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G - 840	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

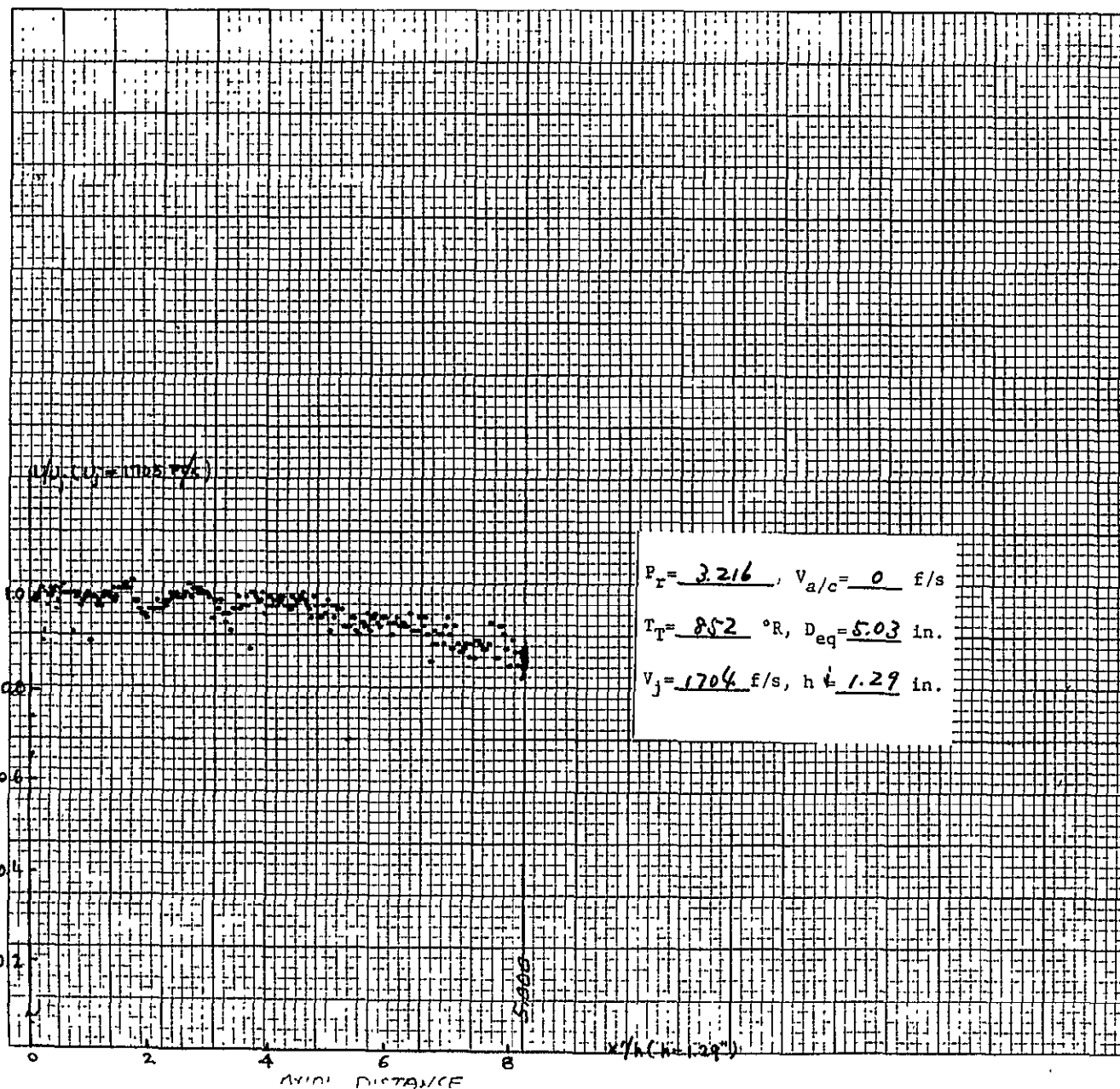
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1011 AX 100

1331

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AXIAL MEAN VELOCITY: U/U_j

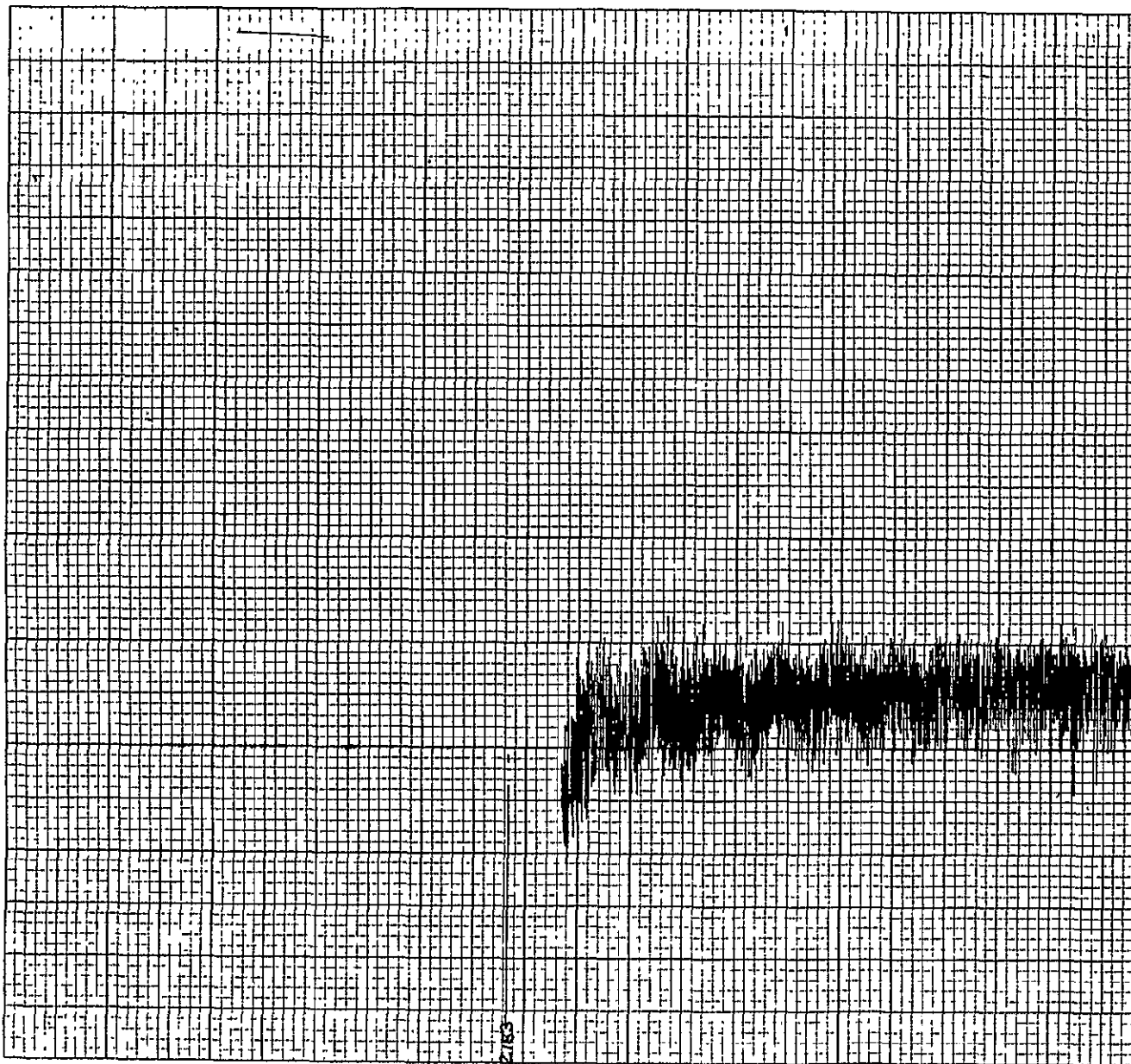


DATE: 5/28/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1613
PLOT IDENTIFICATION: G-840	
TRAVERSE DETAILS.	
AXIAL [S] : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL [] : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 394 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>LINE OF LI TRAVERSE</p>	

Model 6
Test Point 1614

ORIGINAL PAGE 13
OF POOR QUALITY 1011 AX 00

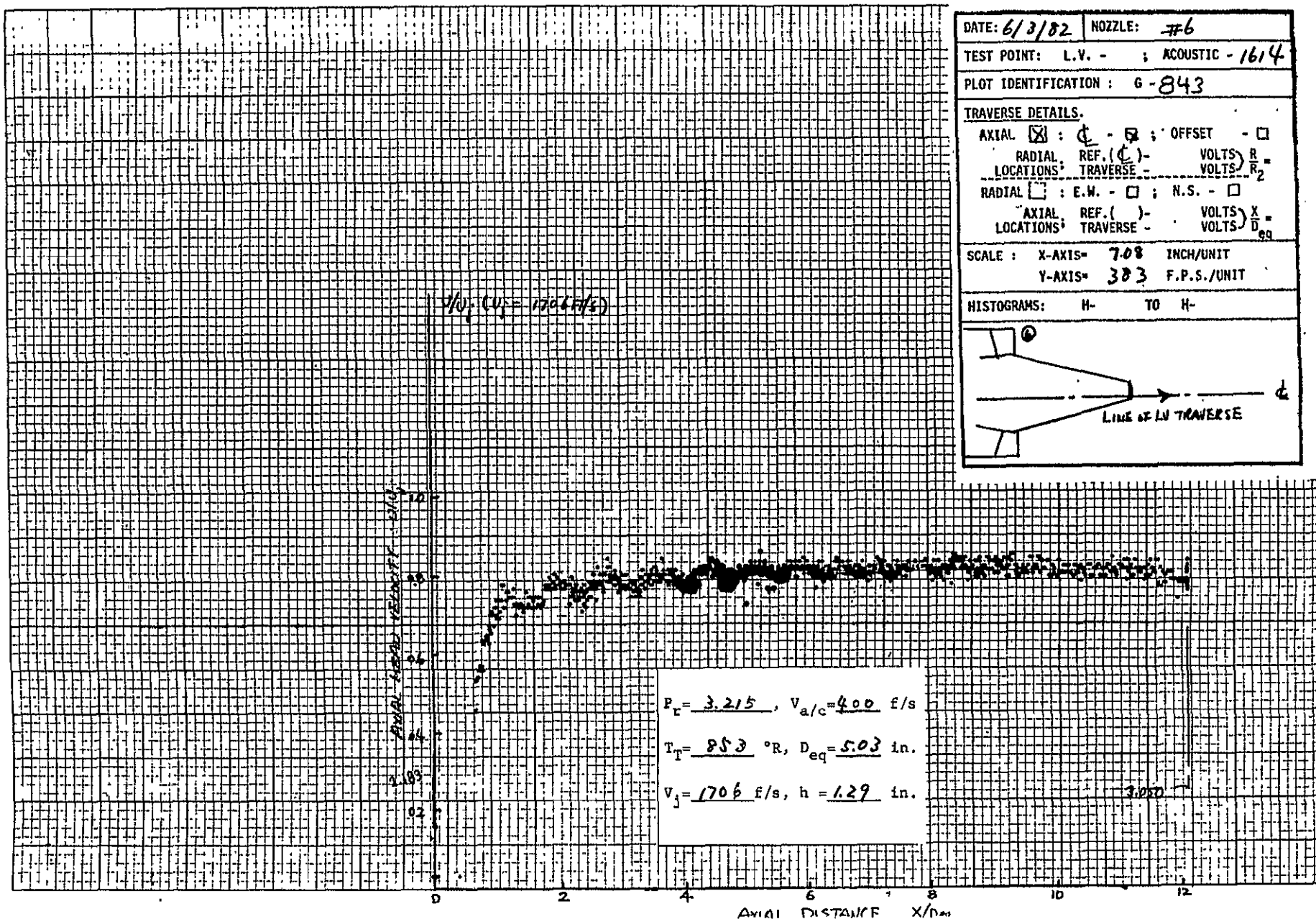
1333
POLYGRAPHIC CORPORATION
BUFFALO, NEW YORK
REPRODUCED FROM
ORIGINAL RECORDING



DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G - 842	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input checked="" type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; H.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{99}	
SCALE : X-AXIS= 7.08 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

1334

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OF POOR QUALITY



DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G - 844

TRAVERSE DETAILS.

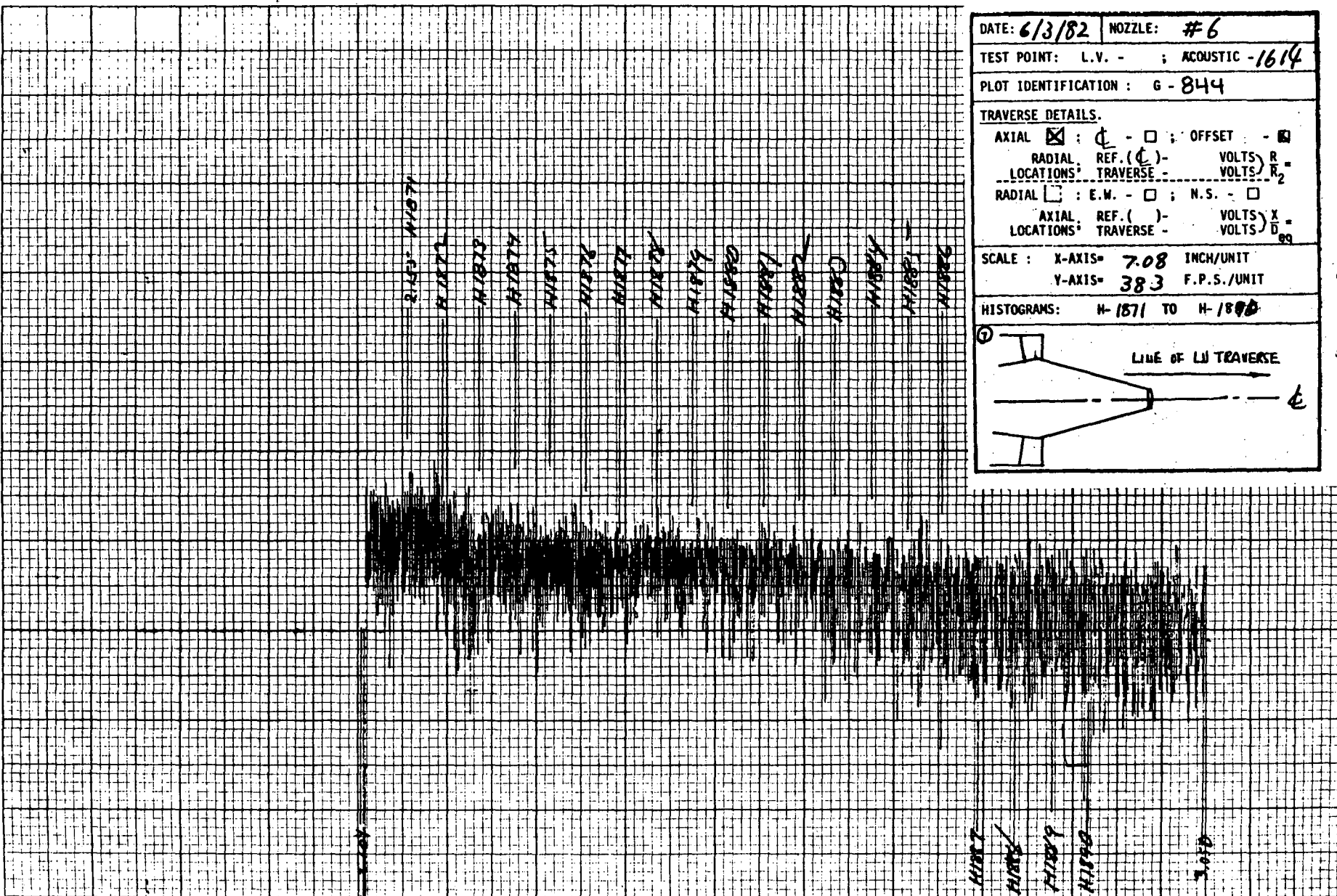
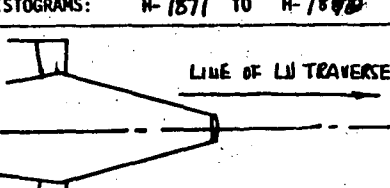
AXIAL ☒ : ϕ - ☐ ; OFFSET - ☒
RADIAL REF. (ϕ) - VOLTS) R -
LOCATIONS* TRAVERSE - VOLTS) R₂
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
AXIAL REF. () - VOLTS) X -
LOCATIONS* TRAVERSE - VOLTS) D - 89

SCALE : X-AXIS= 7.08 INCH/UNIT
Y-AXIS= 383 F.P.S./UNIT

HISTOGRAMS: H-1871 TO H-1888

⑦

LINE OF LV TRAVERSE



DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC -1614

PLOT IDENTIFICATION: G-845

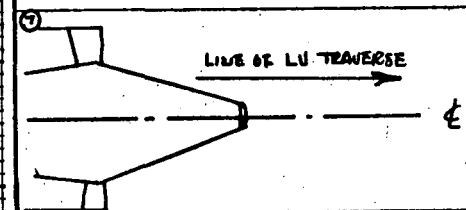
TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☒
 RADIAL REF. (ϕ) - VOLTS R_1
 LOCATIONS TRAVERSE - VOLTS R_2
 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐
 AXIAL REF. () - VOLTS X
 LOCATIONS TRAVERSE - VOLTS D_{eq}

SCALE : X-AXIS= 7.08 INCH/UNIT

Y-AXIS= 383 F.P.S./UNIT

HISTOGRAMS: H- TO H-



$$U/U_j (U_j = 1706 \text{ f/s})$$



$$P_r = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 253^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$

Axial Distance: x/D

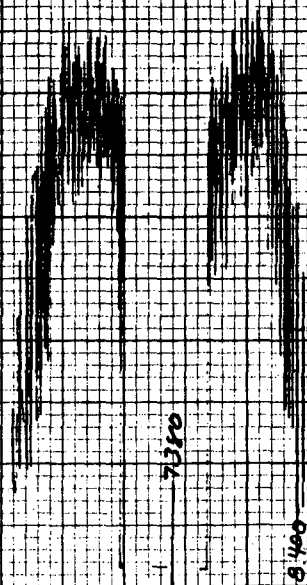
NO. 1011 AX

1337

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DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G - 846	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	$D = 0$
LOCATIONS TRAVERSE - VOLTS D	89
SCALE : X-AXIS= 2.82 INCH/UNIT	
Y-AXIS= 303 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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DATE: 6/8/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G-847

TRAVERSE DETAILS.

AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐

RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2

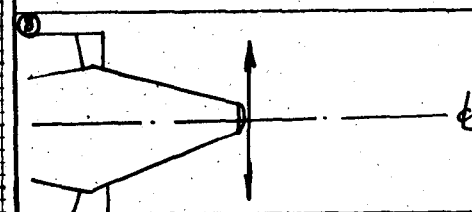
RADIAL ☒ : E.W. - ☒ ; N.S. - ☐

AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS= 3.88 INCH/UNIT

Y-AXIS= 38.3 F.P.S./UNIT

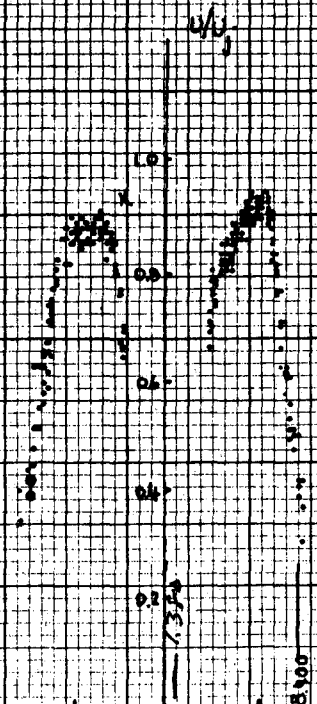
HISTOGRAMS: H- TO H-



$P_r = 3.215$, $V_{a/c} = 400$ f/s

$T_r = 853$ °R, $D_{eq} = 5.03$ in.

$V_j = 1706$ f/s, $h = 1.29$ in.

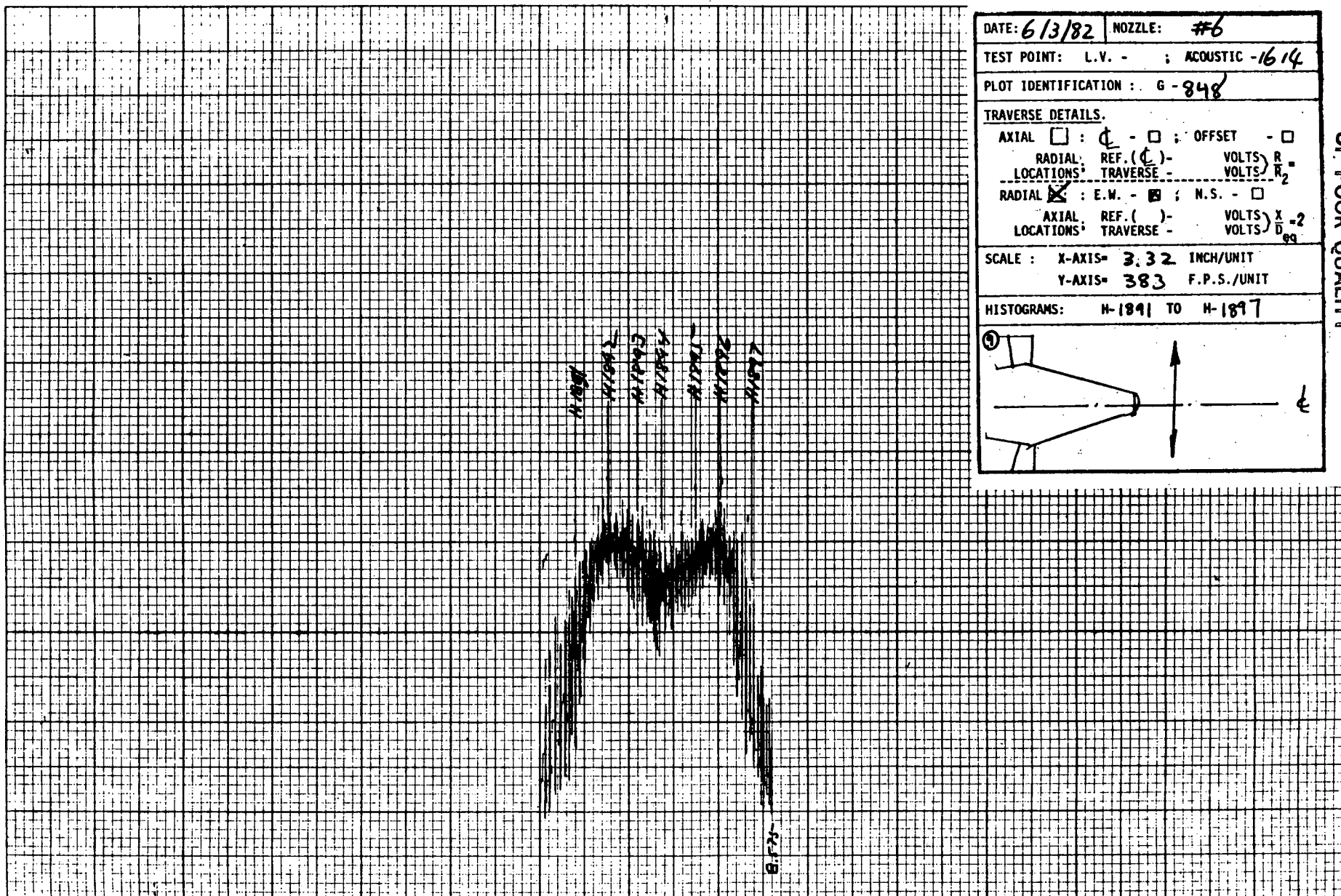


1011 AX NO.

1338

REPRODUCED FROM THE ORIGINAL
BY THE ENGINEERING

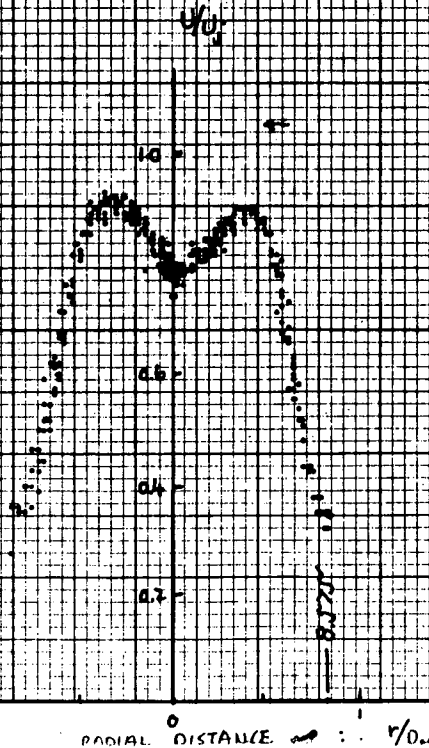
ORIGINAL PAGE IS
OF POOR QUALITY



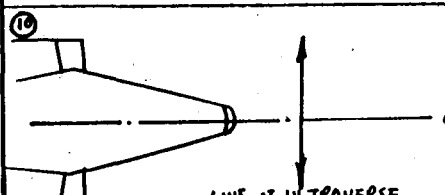
$$P_r = 3.215, V_{a/c} = 400 \text{ f/s}$$

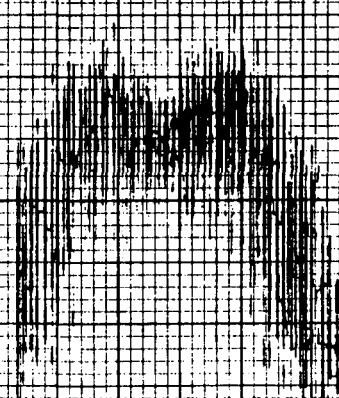
$$T_t = 243^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$



DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1614
PLOT IDENTIFICATION: G-849	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X_{eq}
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION : G - 850	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D	$X/D = 6$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
	



5/57

1011 AX NO

1341

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1342

$$P_r = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 853^\circ R, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$

RADIAL DISTANCE : $\sqrt{D_{eq}}$

DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G-851

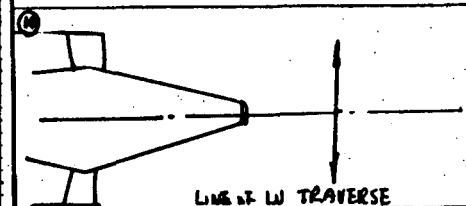
TRAVERSE DETAILS.

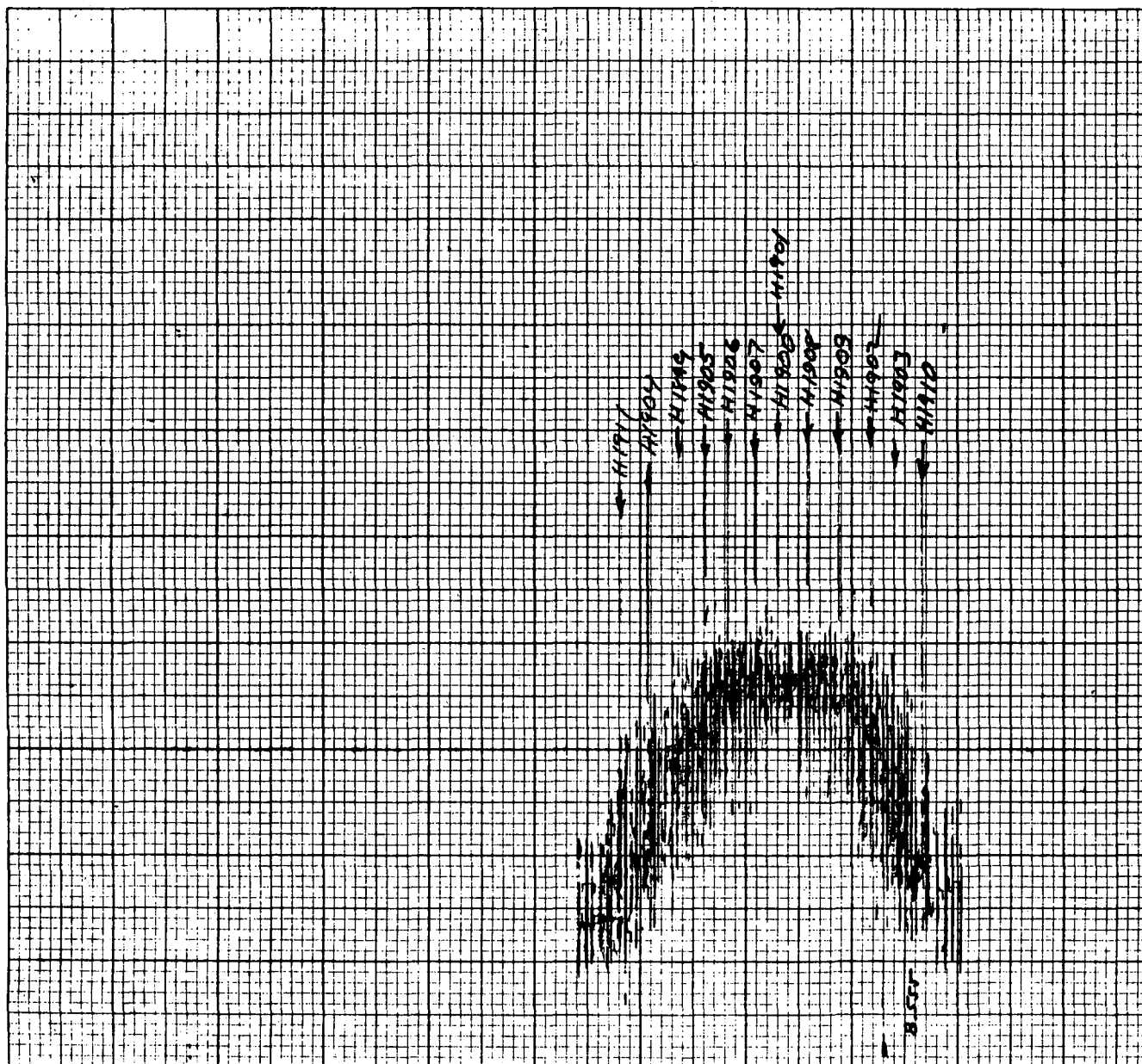
AXIAL ☐ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☒ : E.W. - ☒ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq} = 6

SCALE : X-AXIS = 3.32 INCH/UNIT

Y-AXIS = 383 F.P.S./UNIT

HISTOGRAMS: H- TO H-





DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G - 852

TRAVERSE DETAILS.

AXIAL	<input type="checkbox"/>	:	ϕ	-	<input type="checkbox"/>	:	OFFSET	-	<input type="checkbox"/>
RADIAL		:	REF. (ϕ)	-		:	VOLTS	R	
LOCATIONS		:	TRAVERSE	-		:	VOLTS	R ₂	

RADIAL	<input checked="" type="checkbox"/>	:	E.W.	-	<input checked="" type="checkbox"/>	:	N.S.	-	<input type="checkbox"/>
AXIAL		:	REF. (ϕ)	-		:	VOLTS	X	θ
LOCATIONS		:	TRAVERSE	-		:	VOLTS	D	θ

99

SCALE: X-AXIS= 3.32 INCH/UNIT
Y-AXIS= 383 F.P.S./UNIT

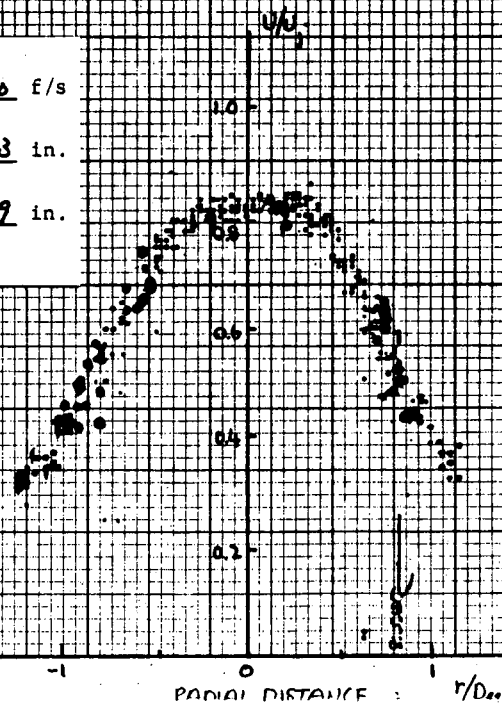
HISTOGRAMS: H-1899 TO H-1911

(11)

LINE OF LV TRAVERSE

ORIGINAL PAGE IS
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$P_r = \underline{3.215}$, $V_{a/c} = \underline{400}$ f/s
 $T_1 = \underline{853}$ °R, $D_{eq} = \underline{5.03}$ in.
 $V_j = \underline{1706}$ f/s, $h = \underline{1.29}$ in.



DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G - 853

TRAVERSE DETAILS.

AXIAL	<input type="checkbox"/>	:	⊥	-	<input type="checkbox"/>	:	OFFSET	-	<input type="checkbox"/>
RADIAL			REF. (⊥)				VOLTS)	R	
LOCATIONS			TRAVERSE				VOLTS)	R	

RADIAL	<input checked="" type="checkbox"/>	:	E.W.	-	<input checked="" type="checkbox"/>	:	N.S.	-	<input type="checkbox"/>
AXIAL			REF. ()				VOLTS)	X	
LOCATIONS			TRAVERSE				VOLTS)	D	

99

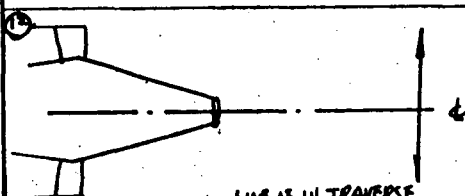
SCALE: X-AXIS= 3.32 INCH/UNIT
Y-AXIS= 383 F.P.S./UNIT

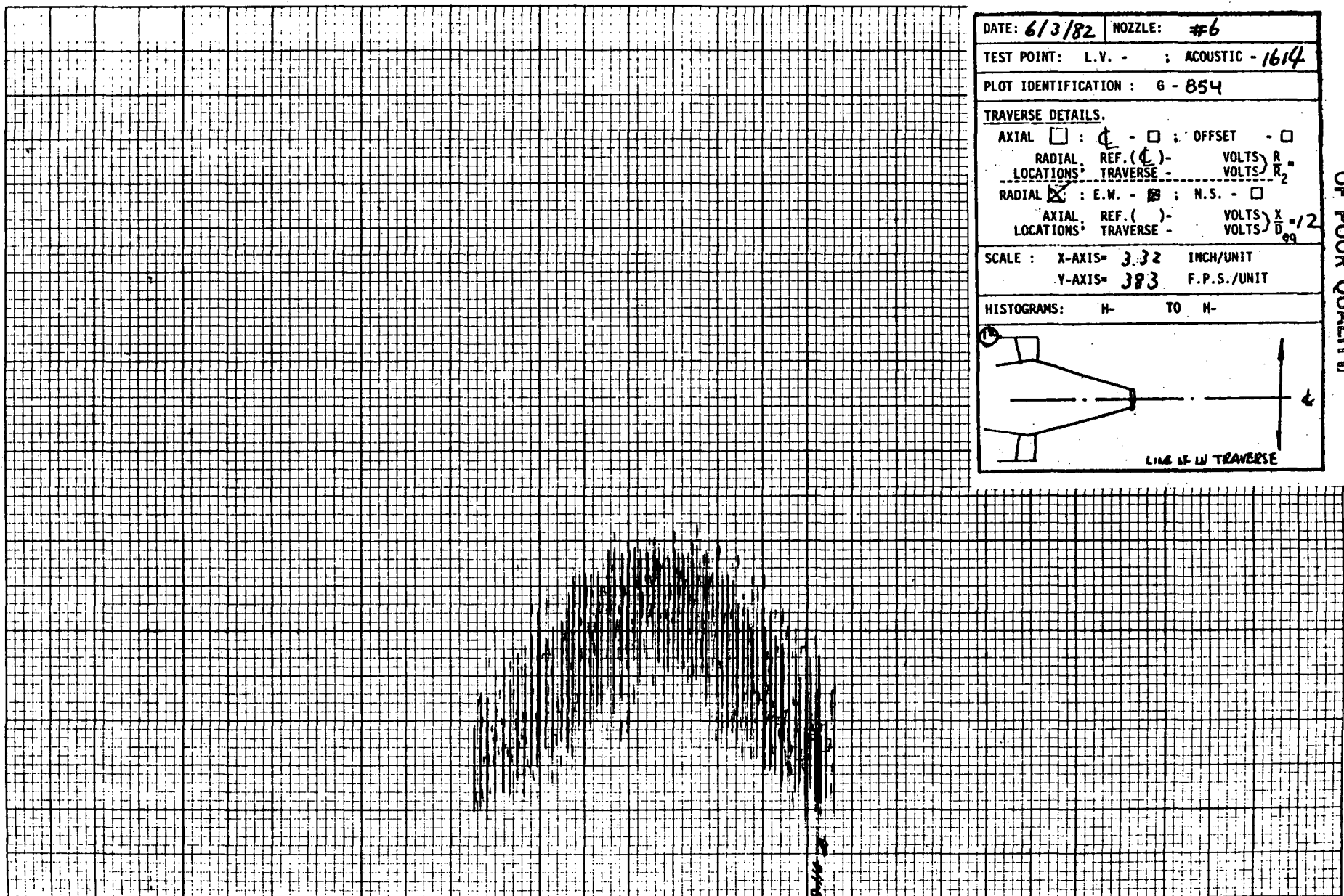
HISTOGRAMS: H- TO H-

⑩

The diagram shows a nozzle on the left with a horizontal line extending from its tip. This line intersects a vertical line, forming a cross. An arrow points downwards from the intersection. To the right of the vertical line is a small circle with a dot in the center. Below the diagram, the text 'LINE OF LV TRAVERSE' is written.

LINE OF LV TRAVERSE

DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION : G - 854	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{eq}}$
LOCATIONS: TRAVERSE -	VOLTS $\frac{X}{D_{eq}}$ - 1/2
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
 <p>LINE OF W TRAVERSE</p>	



1011 AX No.

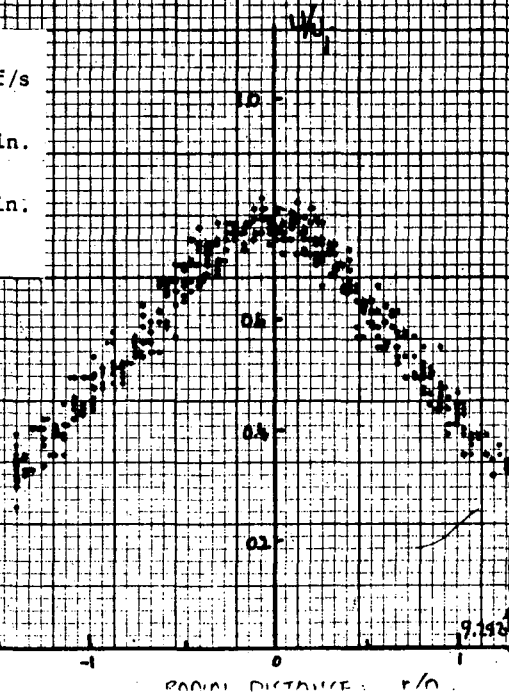
1345

GRAPHIC CONTROL CORPORATION
BUFFALO, NEW YORK
GRAPHIC ENGINEERING

$$P_T = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 853 \text{ } ^\circ\text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$



DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-855	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. (ϕ) - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	$X = 12$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-856	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS $\frac{R}{R_2}$
LOCATIONS TRAVERSE -	VOLTS $\frac{R}{R_2}$
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS $\frac{X}{D_{89}}$
LOCATIONS TRAVERSE -	VOLTS $\frac{X}{D_{89}}$
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

R-516
N-S DRAW
3-4-82
1/24/81
1/24/81

1011 AX No.

1347

GRAPHIC CONTROL SYSTEMS CORPORATION
10000 WILSON BLVD.
DALLAS, TEXAS 75243
(214) 343-1111

1348

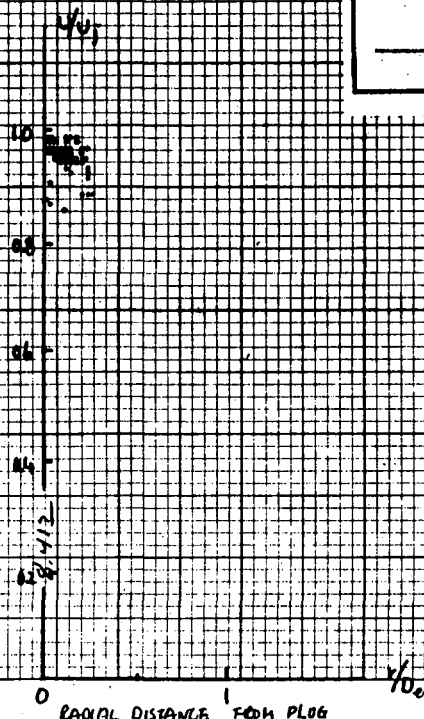
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
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ORIGINAL PAGE IS
OF POOR QUALITY

$$P_r = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_r = 853 \text{ } ^\circ\text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$



DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-857	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - ϕ ; N.S. - \square	
AXIAL REF. () - VOLTS X	
LOCATIONS TRAVERSE - VOLTS D_{eq}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 16/4	
PLOT IDENTIFICATION: G-858	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS $\frac{R}{R_2}$	
LOCATIONS: TRAVERSE -	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS $\frac{X}{D_{99}}$	
LOCATIONS: TRAVERSE -	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

8.187

1011 AX

1349

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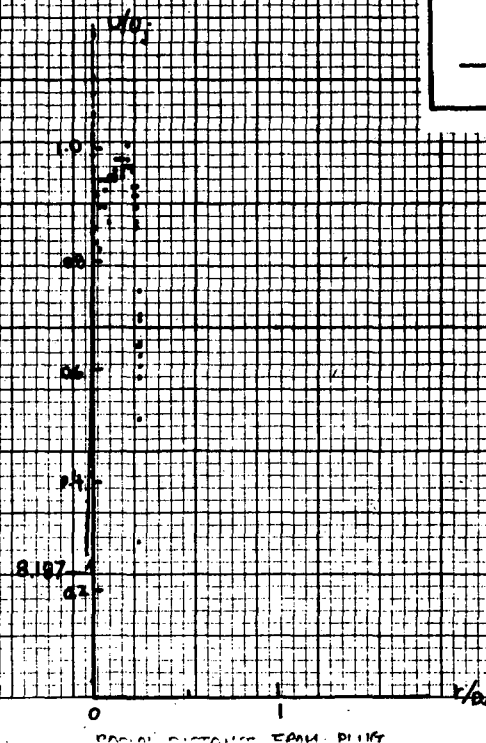
REPRODUCED FROM THE
ORIGINAL INFORMATION
RECEIVED FROM THE
NAVY SECRETARIAT

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$$P_r = \underline{3.215}, V_{a/c} = \underline{400} \text{ f/s}$$

$$T_T = \underline{853}^\circ \text{R}, D_{eq} = \underline{5.03} \text{ in.}$$

$$V_j = \underline{1706} \text{ f/s}, h = \underline{1.29} \text{ in.}$$

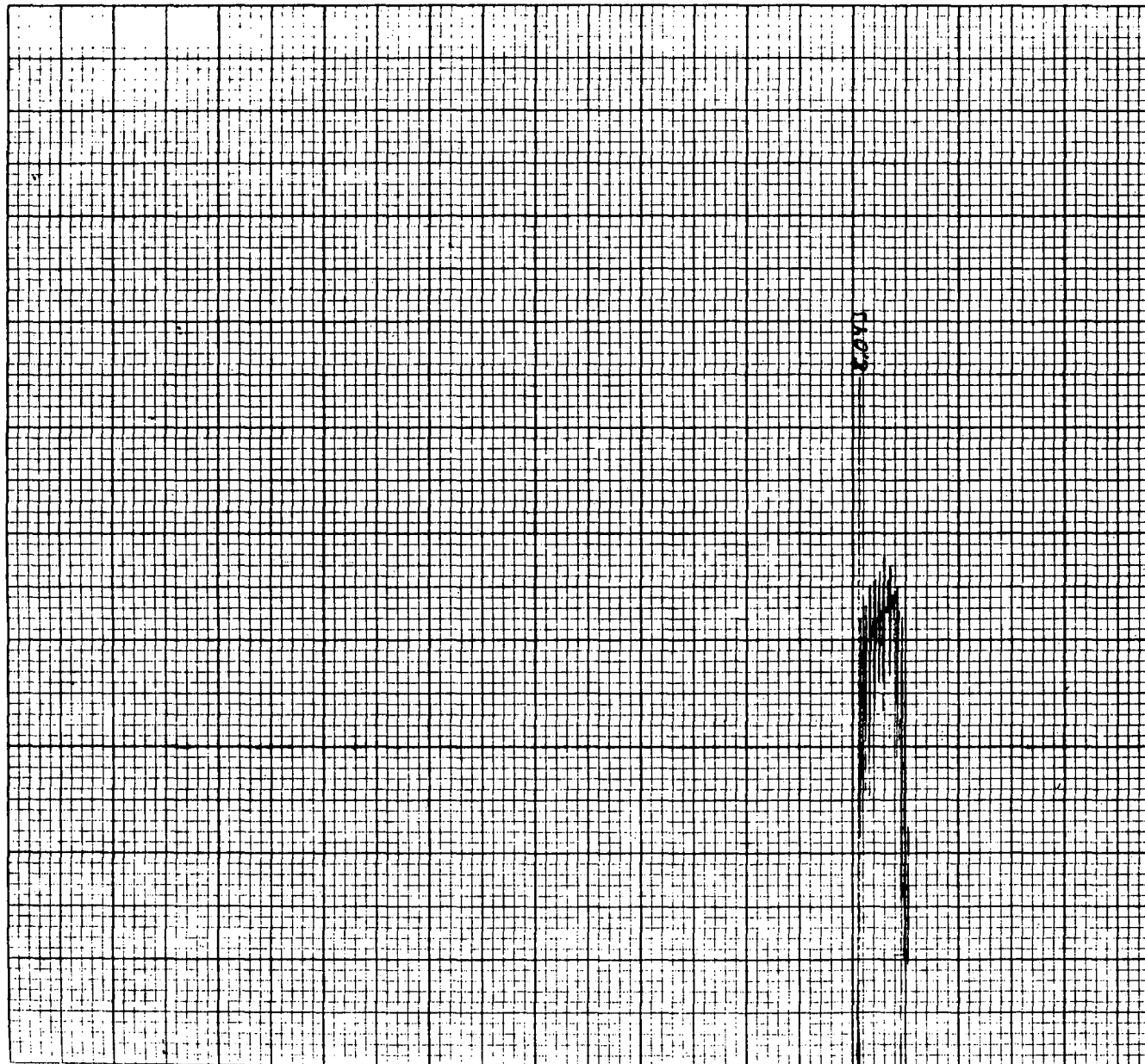


DATE: 6/3/82	NOZZLE: # 6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G - 859	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1351

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NEW YORK, NEW YORK
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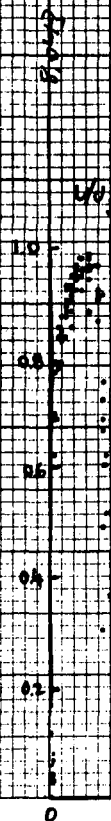
DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-860	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{99}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

ORIGINAL PAGE IS
OF POOR QUALITY

$$P_r = \underline{3.215}, V_{a/c} = \underline{400} \text{ f/s}$$

$$T_r = \underline{853} \text{ } ^\circ\text{R}, D_{eq} = \underline{5.03} \text{ in.}$$

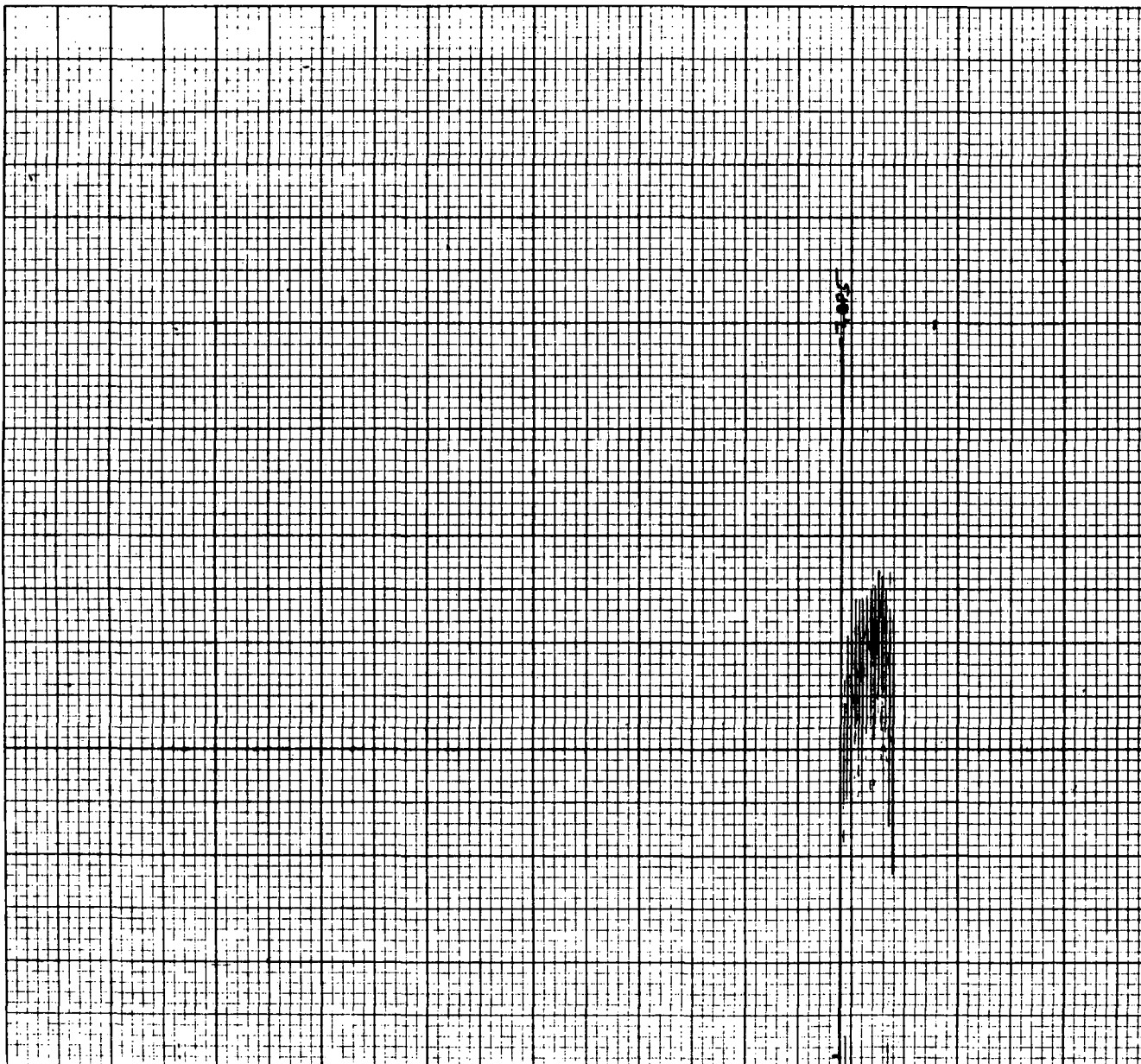
$$V_j = \underline{1706} \text{ f/s}, h = \underline{1.29} \text{ in.}$$



AXIAL DISTANCE FROM PLUG

DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1614
PLOT IDENTIFICATION: G-861	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 38.3 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
15	

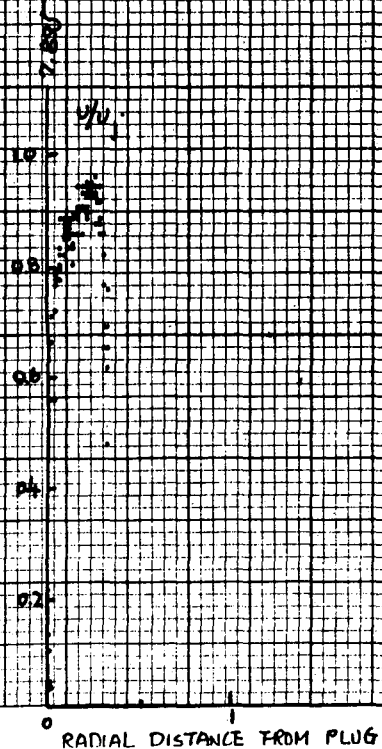
DATE: 6/3/82	NOZZLE: # 6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-862	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D_{99}	
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	



$$P_r = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 853^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$

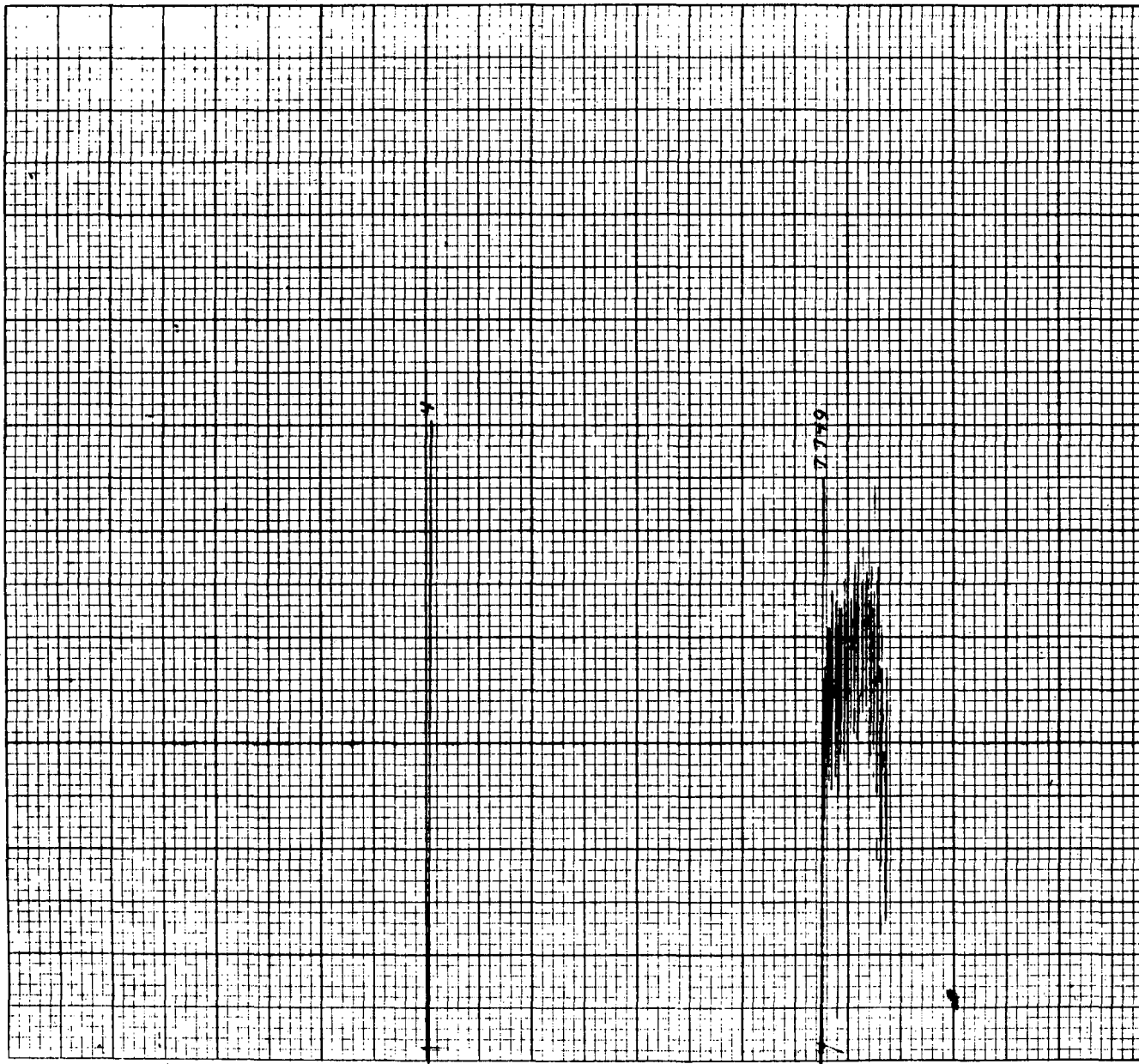


DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G - 867	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL: REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.M. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL: REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{99}
SCALE : X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

NO. XY 1101

1355

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DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G - 864	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D	
SCALE : X-AXIS= 2.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>② LINE AT L₁ TRAVERSE</p>	

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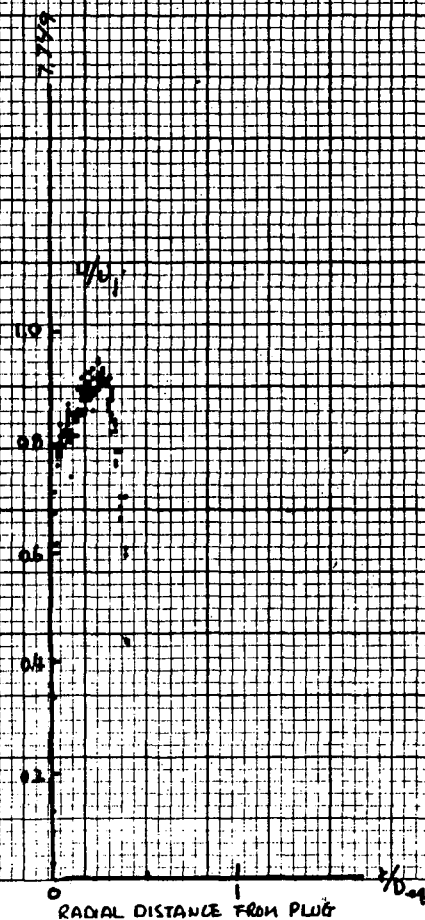
REPRODUCED FROM
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ADMINISTRATION
REPORT 1356

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$$P_T = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_T = 853^\circ \text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$

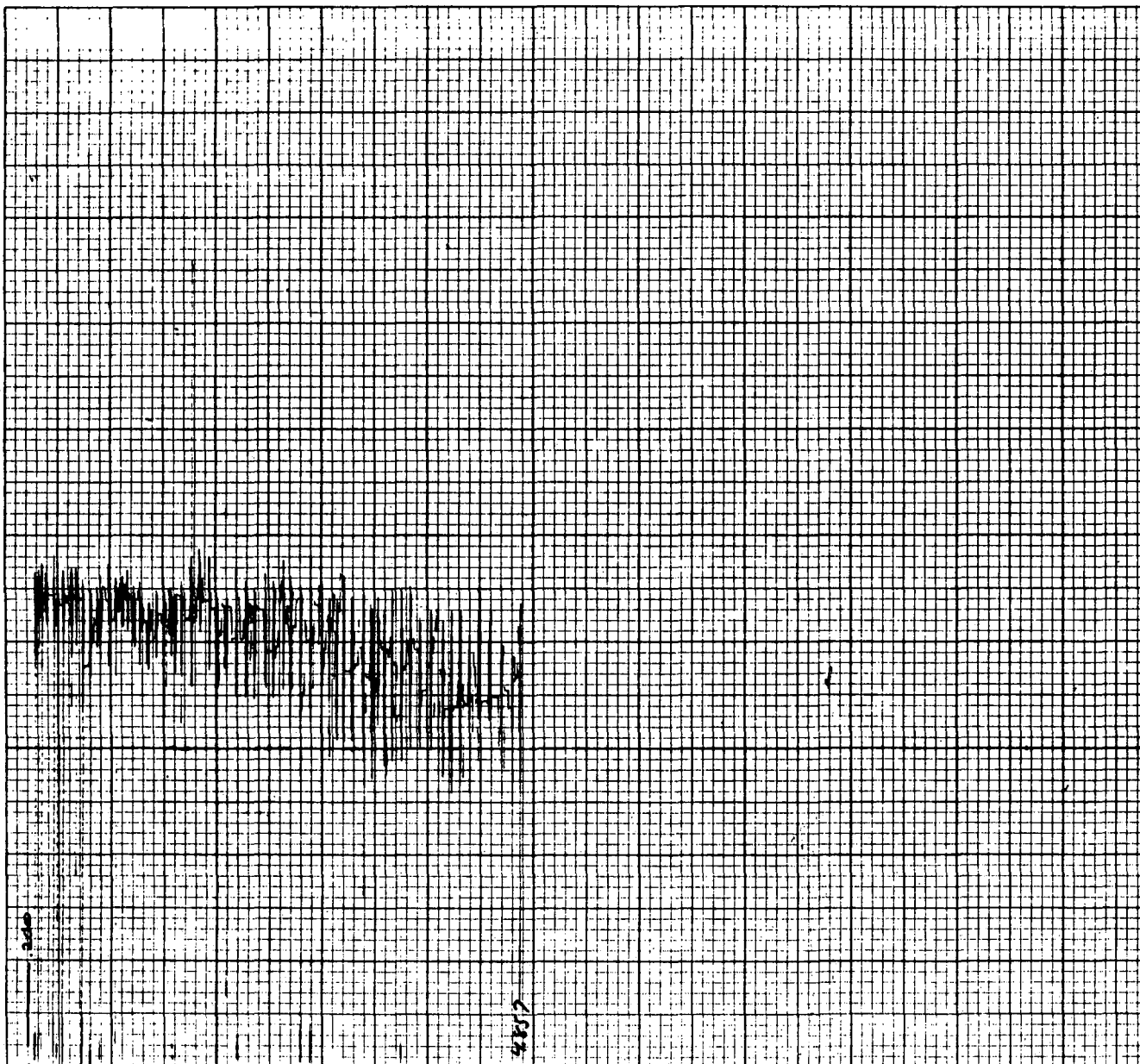


DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-865	
TRAVERSE DETAILS.	
AXIAL <input type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS: TRAVERSE -	VOLTS R_2
RADIAL <input checked="" type="checkbox"/> : E.W. - <input checked="" type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () -	VOLTS X
LOCATIONS: TRAVERSE -	VOLTS D_{eq}
SCALE: X-AXIS= 3.32 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	

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1357



DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G-866	
TRAVERSE DETAILS.	
AXIAL (S) : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS R_2
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL \square : E.M. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{eq}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>⑤</p>	

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10-2-10-19-2000
A-377 N.S. TRAV @ 0.0775 S/L

6.584

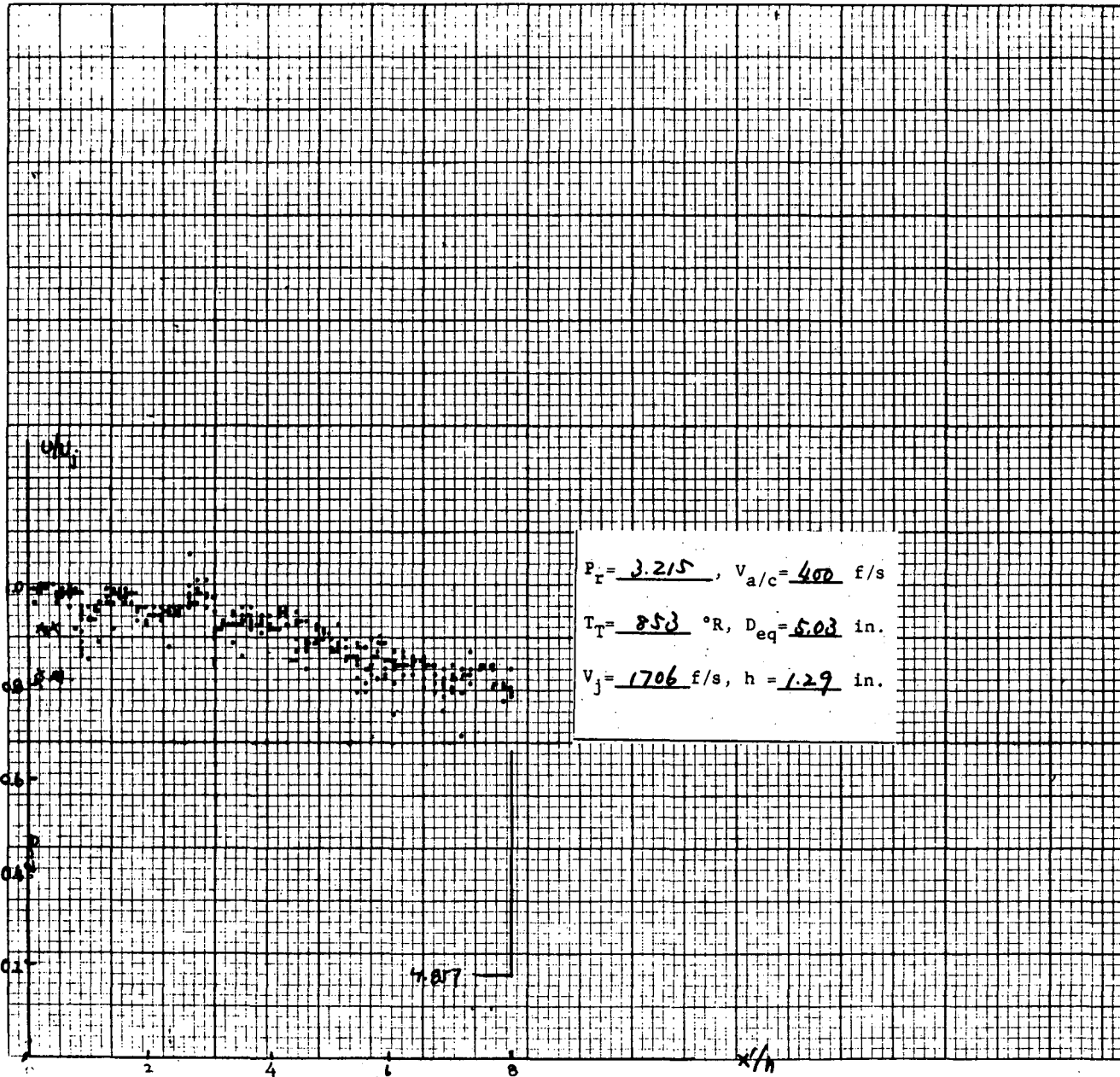
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NO. XY 1101

1358

AXIAL MEAN VELOCITY



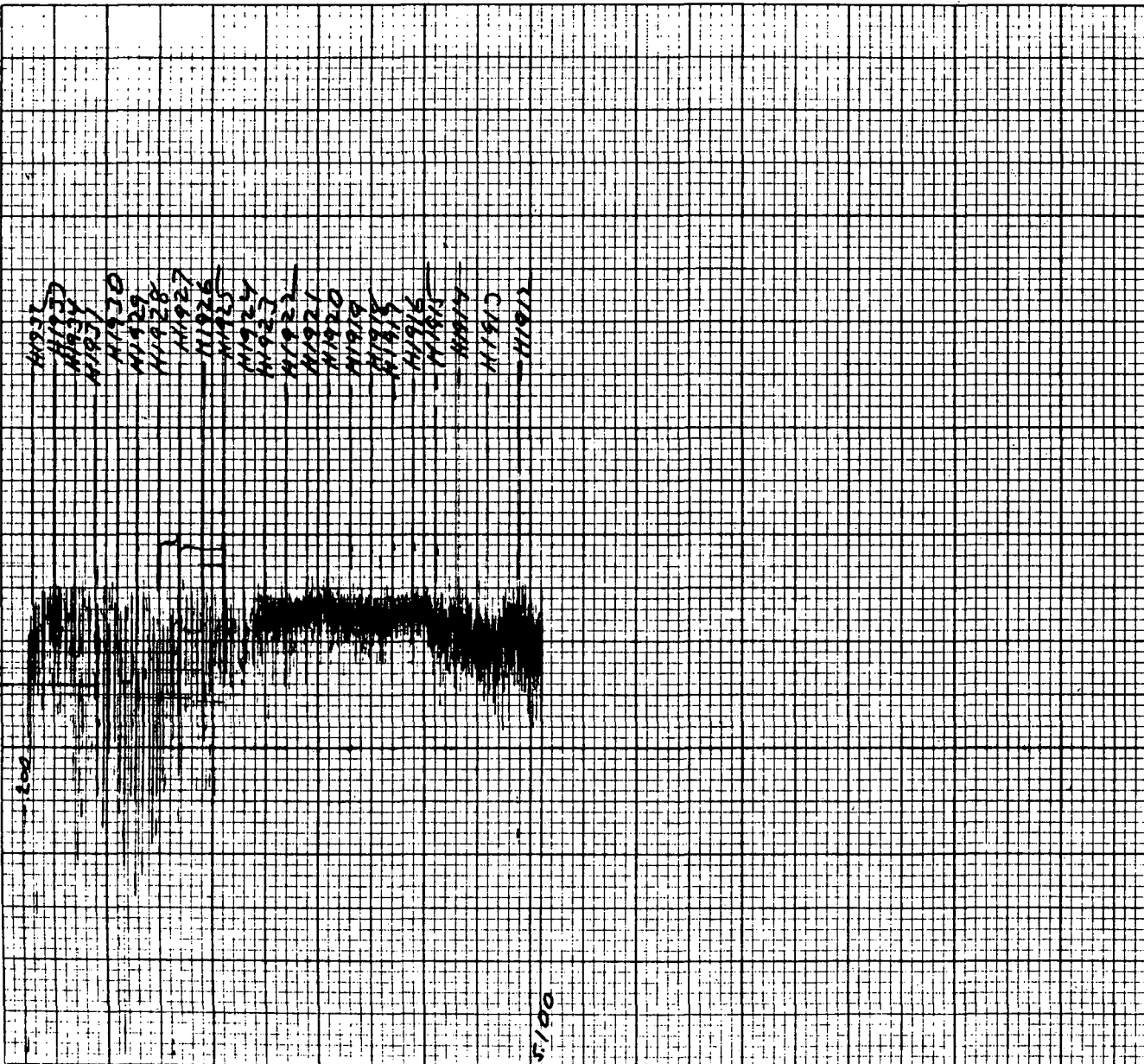
$$P_r = 3.215, V_{a/c} = 400 \text{ f/s}$$

$$T_1 = 853 \text{ } ^\circ\text{R}, D_{eq} = 5.03 \text{ in.}$$

$$V_j = 1706 \text{ f/s}, h = 1.29 \text{ in.}$$

DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. -	ACOUSTIC - 1614
PLOT IDENTIFICATION: G-867	
TRAVERSE DETAILS.	
AXIAL [S] : ϕ - \square ; OFFSET - \square	
RADIAL REF. (ϕ) -	VOLTS R_1
LOCATIONS TRAVERSE -	VOLTS R_2
RADIAL \square : E.W. - \square ; N.S. - \square	
AXIAL REF. () -	VOLTS X
LOCATIONS TRAVERSE -	VOLTS D_{99}
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 303 F.P.S./UNIT	
HISTOGRAMS: H- TO H-	
<p>⑤</p>	

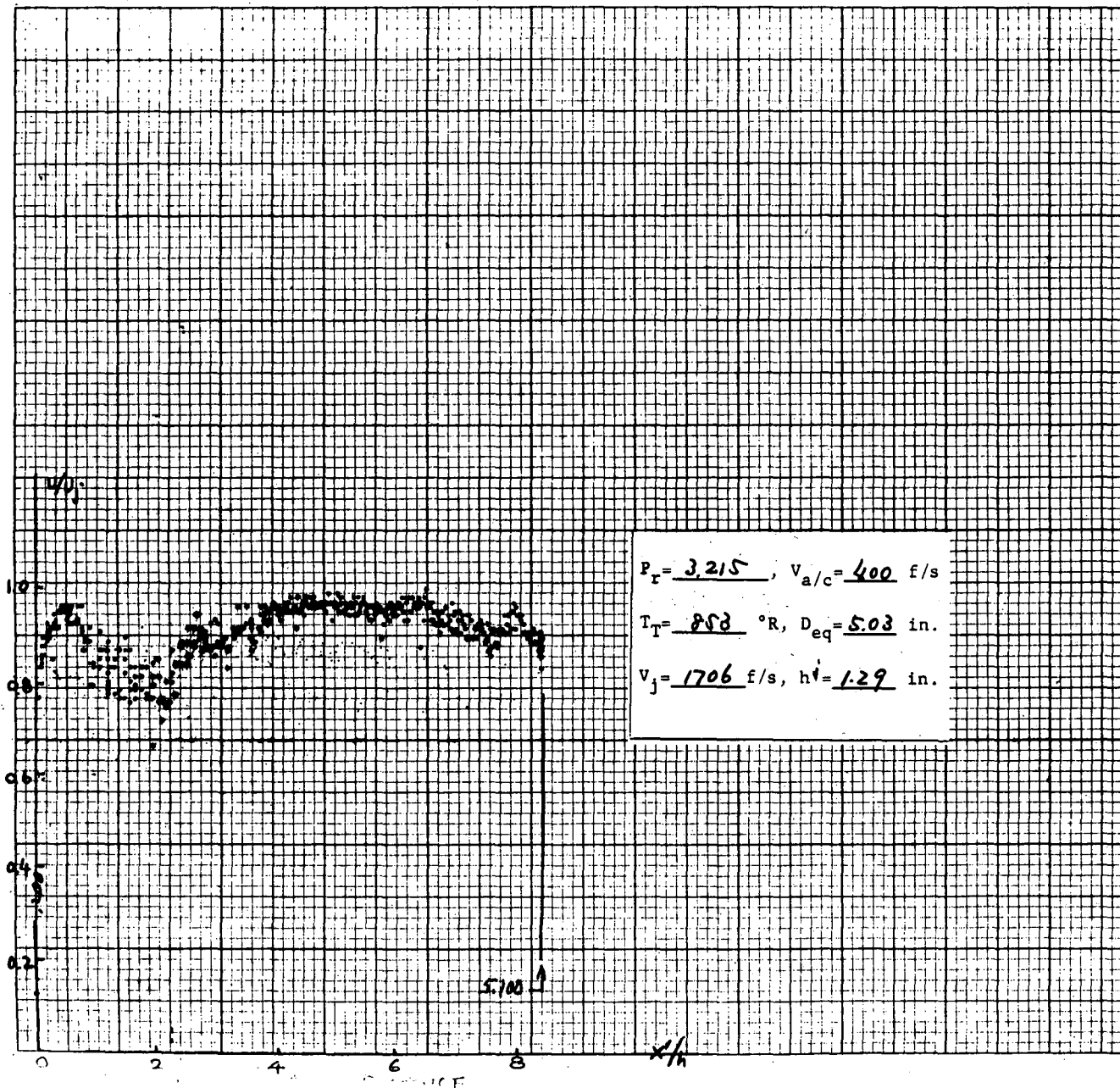
DATE: 6/3/82	NOZZLE: #6
TEST POINT: L.V. - ; ACOUSTIC - 1614	
PLOT IDENTIFICATION: G - 868	
TRAVERSE DETAILS.	
AXIAL <input checked="" type="checkbox"/> : ϕ - <input type="checkbox"/> ; OFFSET - <input type="checkbox"/>	
RADIAL REF. (ϕ) - VOLTS R_1	
LOCATIONS: TRAVERSE - VOLTS R_2	
RADIAL <input type="checkbox"/> : E.W. - <input type="checkbox"/> ; N.S. - <input type="checkbox"/>	
AXIAL REF. () - VOLTS X	
LOCATIONS: TRAVERSE - VOLTS D	89
SCALE : X-AXIS= 2.22 INCH/UNIT	
Y-AXIS= 383 F.P.S./UNIT	
HISTOGRAMS: H-1912 TO H-1932	
<p>②</p>	



1011 AX

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DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G - 869

TRAVERSE DETAILS.

AXIAL	<input checked="" type="checkbox"/>	:	ϕ	-	<input type="checkbox"/>	; OFFSET	-	<input type="checkbox"/>
RADIAL			REF. (ϕ)	-		VOLTS)	R	
LOCATIONS			TRAVERSE	-		VOLTS)	R	

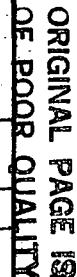
RADIAL	<input type="checkbox"/>	:	E.W.	-	<input type="checkbox"/>	; N.S.	-	<input type="checkbox"/>
AXIAL			REF. ()	-		VOLTS)	X	
LOCATIONS			TRAVERSE	-		VOLTS)	D	
								99

SCALE: X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 383 F.P.S./UNIT

HISTOGRAMS: H- TO H-

②

LINE OF W TRAVERSE



DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G - 870

TRAVERSE DETAILS.

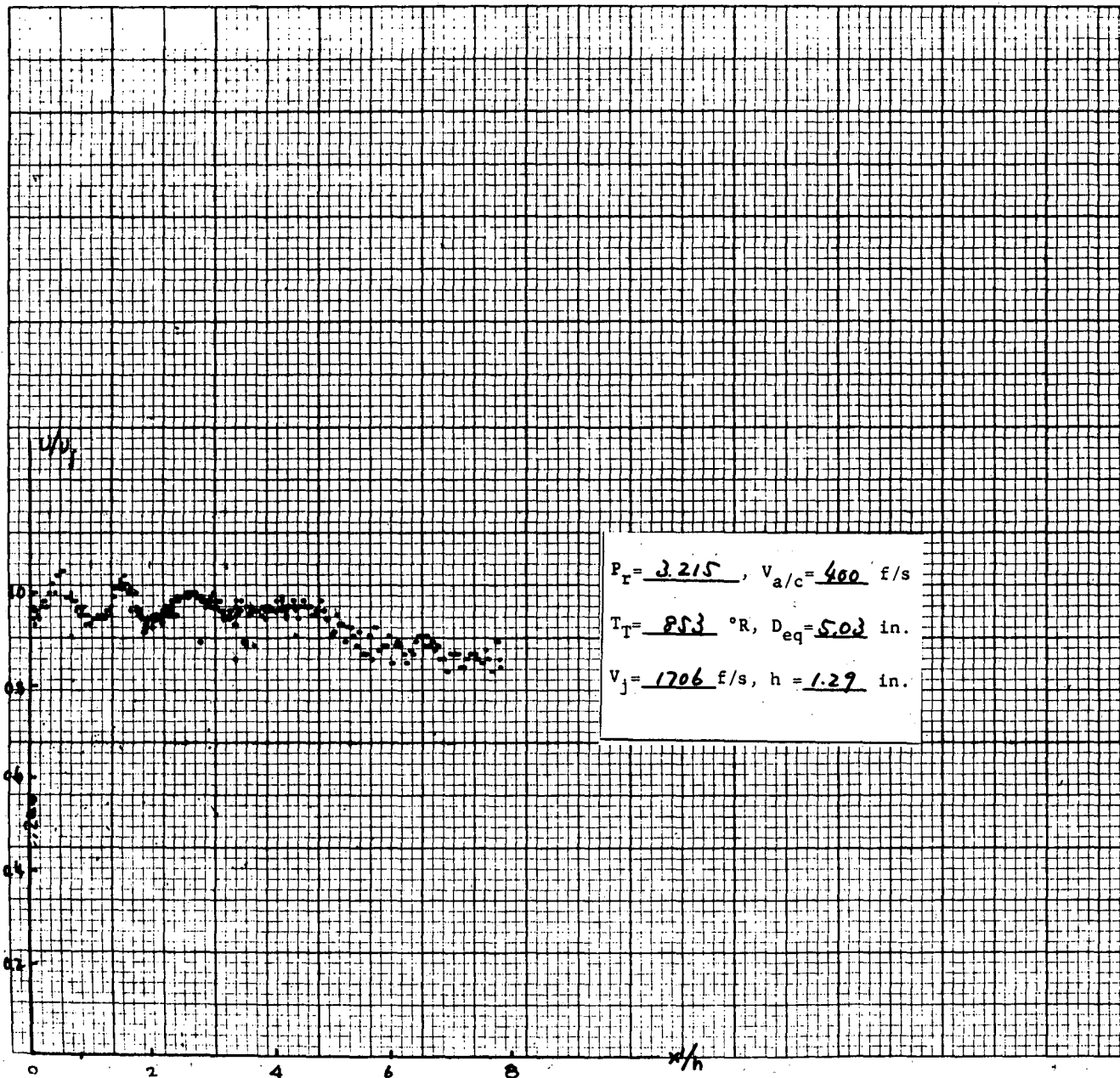
AXIAL	<input checked="" type="checkbox"/>	:	⊥	-	<input type="checkbox"/>	:	OFFSET	-	<input type="checkbox"/>
RADIAL		:	REF. (⊥)	-		:	VOLTS	R	
LOCATIONS		:	TRAVERSE	-		:	VOLTS	R	

RADIAL	<input type="checkbox"/>	:	E.W.	-	<input type="checkbox"/>	:	N.S.	-	<input type="checkbox"/>
AXIAL		:	REF. ()	-		:	VOLTS	X	
LOCATIONS		:	TRAVERSE	-		:	VOLTS	D	
									99

SCALE: X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 383 F.P.S./UNIT

HISTOGRAMS: H-1935 TO H-1945

LINE OF LV TRAVERSE



$$P_r = \underline{3.215}, \quad V_{a/c} = \underline{400} \text{ f/s}$$

$$T_T = \underline{853} \text{ } ^\circ\text{R}, \quad D_{eq} = \underline{5.02} \text{ in.}$$

$$V_j = \underline{1706} \text{ f/s}, \quad h = \underline{1.29} \text{ in.}$$

DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G-871

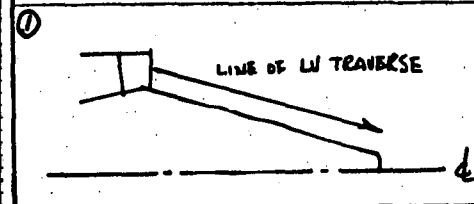
TRAVERSE DETAILS.

AXIAL ☒ : ϕ - ☐ ; OFFSET - ☐RADIAL REF. (ϕ) - VOLTS R_1
LOCATIONS TRAVERSE - VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS TRAVERSE - VOLTS D_{99}

SCALE: X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 383 F.P.S./UNIT

HISTOGRAMS: H-1935 TO H-1945



DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC - 1614

PLOT IDENTIFICATION: G - 872

TRAVERSE DETAILS.

AXIAL	<input checked="" type="checkbox"/>	:	⊥	-	<input type="checkbox"/>	:	OFFSET	-	<input type="checkbox"/>
RADIAL		:	REF. (⊥)	-		:	VOLTS	R	
LOCATIONS		:	TRAVERSE	-		:	VOLTS	R	2

RADIAL	<input type="checkbox"/>	:	E.W.	-	<input type="checkbox"/>	:	N.S.	-	<input type="checkbox"/>
AXIAL		:	REF. ()	-		:	VOLTS	X	
LOCATIONS		:	TRAVERSE	-		:	VOLTS	D	

99

SCALE: X-AXIS= 2.22 INCH/UNIT
Y-AXIS= 383 F.P.S./UNIT

HISTOGRAMS: H- TO H-

LINE OF LV TRAVERSE

d

DATE: 6/3/82

NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC -1614

PLOT IDENTIFICATION: G - 872

TRAVERSE DETAILS.

AXIAL [5] : ϕ - \square ; OFFSET - \square

RADIAL. REF. (C)- VOLTS, R.

LOCATIONS: TRAVERSE - VOLTS/ R₂

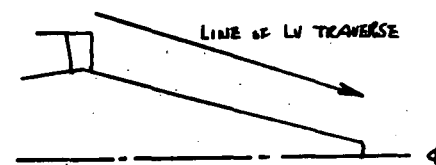
RADIAL ☐ : E.W. - ☐ ; N.S. - ☐

AXIAL LOCATIONS:	REF. () -	VOLTS } X
TRAVERSE -		VOLTS } D.
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SCALE : X-AXIS= 2.22 INCH/UNIT

Y-AXIS= 38.3 F.P.S./UNIT

HISTOGRAMS: H- TO H-

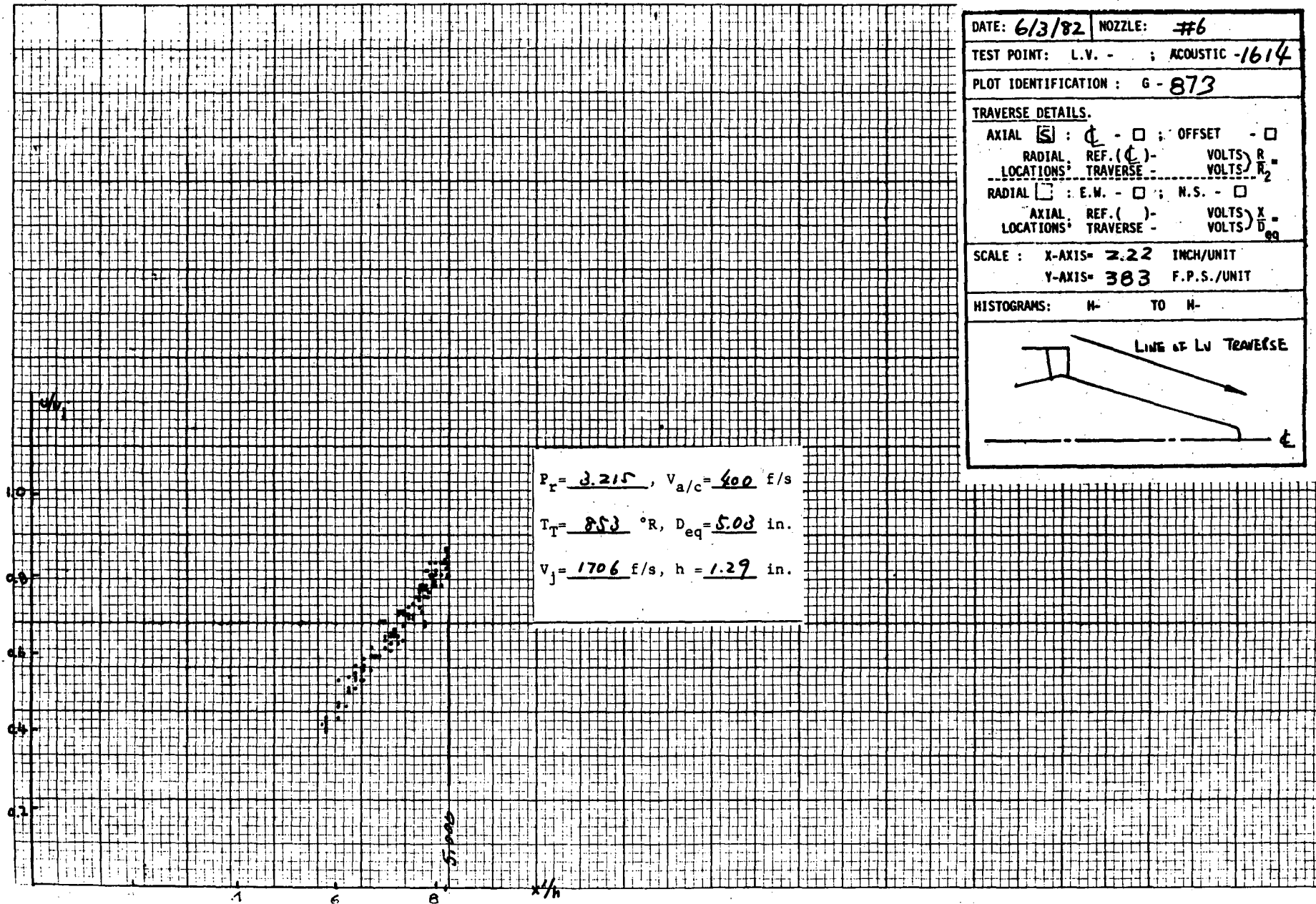


Mo. XY 1101

1363

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AXIAL MEAN VELOCITY



DATE: 6/3/82 NOZZLE: #6

TEST POINT: L.V. - ; ACOUSTIC -1614

PLOT IDENTIFICATION: G-873

TRAVERSE DETAILS.

AXIAL ☒ : ☐ - ☐ ; OFFSET - ☐RADIAL REF. (C) - VOLTS R_1
LOCATIONS: TRAVERSE - VOLTS R_2 RADIAL ☐ : E.W. - ☐ ; N.S. - ☐AXIAL REF. () - VOLTS X
LOCATIONS: TRAVERSE - VOLTS D_{eq}

SCALE: X-AXIS = 2.22 INCH/UNIT

Y-AXIS = 383 F.P.S./UNIT

HISTOGRAMS: H- TO H-

